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Research By-Product  
DETECTION AND AVOIDANCE OF  
MINES AND BOOBYTRAPS IN SOUTH VIETNAM

Training and Tactical Procedures  
of the 1st Infantry Division

Collected and Compiled by George J. Magner

March 1968

45

The George Washington University  
HUMAN RESOURCES RESEARCH OFFICE  
operating under contract with  
THE DEPARTMENT OF THE ARMY

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Technical Advisory Services

This document does not represent official opinion  
or policy of the Department of the Army.

HumRRO Division No. 4  
(Infantry)

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report describes interviews conducted in a project to: (1) evaluate prevailing training methods for detecting and avoiding mines and booby traps; (2) determine training requirements, especially for minesweepers; and (3) develop recommendations for improved training. This volume provides both summaries and transcripts of interviews from the 1st Infantry Division.		

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#### FOREWORD

In response to a requirement from the Army Concept Team in Vietnam (ACTIV), HumRRO Division No. 4 (Infantry) undertook, as a Technical Advisory Service, to assist in a project, Study and Evaluation of Counter-mine Activities (SECMA), proposed as a response to increased casualties from mines and boobytraps in Vietnam. HumRRO participation was designed to accomplish or assist in the accomplishment of three subtasks:

- a. Evaluate present training for detection and avoidance of mines and boobytraps.
- b. Determine training requirements, particularly for mine sweepers.
- c. Develop recommendations for improvements in training, particularly for mine sweepers.

To accomplish the second of these objectives, a HumRRO representative conducted interviews in Vietnam during January and February 1968. Persons interviewed included engineer and infantry personnel, both officers and enlisted men. Interviews were conducted in five different major commands in Vietnam to develop a data base representative of conditions in all parts of Vietnam, and thus to provide a basis for improving training for soldiers assigned to any part of the country. The collection of data was markedly facilitated by extensive assistance provided by ACTIV, which included transportation and a project officer, which is gratefully acknowledged.

The present volume consists of transcriptions of tape-recorded interviews from one of the five major commands furnishing data. It is divided into two sections. The first section consists of interview summaries which contain the key points mentioned in each of the interviews. The second section contains the interviews themselves.

Subsequent work on this project will include analysis of quantitative data extracted from the interviews and from data forms completed by the units contacted, and the publication of a consulting report based on the findings.

This work is being done at HumRRO Division, No. 4 (Infantry), Fort Benning, Georgia. The Director of Research of this Division is Dr. T. O. Jacobs. Military support for the study was provided by the U.S. Army Infantry Human Research Unit, with which HumRRO Division No. 4 is co-located. LTC Ferdinand O. Barger, Jr. was the Unit Chief at the time the research was performed.

HumRRO research is conducted under Army Contract DA 44-188-ARO-2, and under Army Project 2J024701A712 01, Training, Motivation and Leadership Research.

Meredith P. Crawford  
Director  
Human Resources Research Office

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S U M M A R I E S

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INTERVIEW WITH TWO MAJORS, ASSISTANT G3 TRAINING

These two officers from the division G3 training section generously offered to brief us on the division's general situation and particularly on the mines and boobytrap problem. They had both been in Vietnam for some time and were very knowledgeable on this subject, particularly on measures being taken to counter the mine and boobytrap threat. One of the main points they made was that personnel in the division received standardized training on mine sweeping formations and techniques so that any combination of attachments was possible without any loss of effectiveness. Also, training for personnel of tactical units in mine sweeping was stressed in order to provide back-up for the engineers or an independent capability, if required. They described the division's method of clearing and securing the 50 kilometers of Route 13 from Lai Khe to Quan Loi by operations out of nine base positions located along the road. These semipermanent positions, called Night Defense Positions (NDP's), usually consisted of a company-sized unit and an artillery element. About five days a week they cleared and secured the road for supply convoys by moving sweep teams toward each other from the bases and following them up with security elements that set up strong points along the road. The division also used extensive preventive measures which included night ambushes moving out from the base locations, radar, searchlights, aircraft observation, and H and I fires. These procedures seemed to have been quite successful in reducing casualties from mines and boobytraps. Some other unusual points noted were that the division did not move troops by vehicular convoys but used other less precarious means and they maintained replacement training schools at their five major bases rather than one division school. The point here was to permit the man to join a company first and then go to school, rather than go to the training as an unassigned man still in the impersonal replacement stream. A key point made in the discussion was that through constant attention to the mine and boobytrap problem on Route 13, the division has been able to reduce the threat and accomplish the mission with fewer troops.

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INTERVIEW WITH AN INSTRUCTOR FROM THE 3D BRIGADE COMBAT INDOCTRINATION SCHOOL

The sergeant interviewed was the mines and boobytrap instructor for the 3d Brigade's Combat Indoctrination School for replacements. This was one of the division's five schools of this type located at their five major bases. The replacements received two hours on mines and boobytraps and then this training is also integrated into two four-hour field problems. In one of these problems they have boobytraps placed on their patrol route; on another they try to locate mines visually while moving down a road. They had used a boobytrap lane, but it was not in operation at this time because of enemy mortar fire having been received in this area. There was no training being given on mine detectors as the school had been required to turn theirs in. The school offers training assistance to units as desired. Training for NCO's is conducted by the division mobile training team that circulates to the field units' locations. LRRP's were being sent to Recondo School at Nha Trang. The sergeant seemed to feel that the brigade level schools were not too well supported. He also felt that much of the information the men came in with from their initial training was out of date, inappropriate, or has too much emphasis on certain areas. He felt the main VC item being used at this time was a come-along vine as a trip wire. A point emphasized in instruction was to leave the mines and boobytraps alone when you found them. Rather than try to disarm them, blow them in place.

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INTERVIEW WITH THE ASSISTANT S3, 1st ENGINEER BATTALION

This Captain, Assistant S3, was a very well qualified individual who was just completing his one-year Vietnam tour. He had written an article on the subject of mines and boobytraps and had done considerable research in this area. He estimated that 33% of the division's casualties as of May, 1967 had been from mines and boobytraps, with mines accounting for about 22% and boobytraps around 11%. The item causing them the most trouble was the minimum metal antitank mine that had only metal strips inside the strips of bamboo, wire, blasting caps, and a battery. This was often offset to go off under the center of the vehicle. Next most common was the Air Force or artillery duds that were boobytrapped by the VC, then U.S. and Chicom grenades and Chicom Claymores. Almost 99% of the items were encountered on road clearing operations. Most of these were found on the shoulders of the road and generally on roads near populated areas. Electrical command-detonated mines are most frequently encountered and they are often planted in the wet season when they are difficult to detect and then hooked up in the dry season. Other types of initiating action noted were pressure, pressure-release and pull. Most fuzes were instantaneous, but the offset mines had a delay effect in exploding in a different area than where triggered. Also, the bamboo was often run over many times before being compressed by a heavy enough vehicle to detonate it and, in effect, provided a delay factor. He estimated that detection by mine detectors and visual means was about 50-50, but after being on a road for awhile somewhat more than 50% of the detection was done visually by experienced sweepers. Many were found by VC signs that, of course, varied in different parts of the country. Also, it was noted that constant sweeps and use of the road decreased the number of mines found. The division had used a sheepsfoot roller and a jeep-mounted mine detector in the past but neither had offered a significant improvement and had been dropped. The rooter had been the most help in combatting command-detonated mines. Grappling hooks had been used as well as lines attached to an ALC to pull on the mine. Caution was needed in checking wires which were often boobytrapped. No night detection was done, but preventive measures employed were running the roads and radar surveillance. Mines and boobytraps are not by-passed, but it is necessary to bring out laterite and road repair equipment to repair road craters. On the training of the average replacement, they definitely need more demolitions training and more training on the mine detector. They would still need follow-up training in the unit, OJT, and periodic refresher training prior to going on difficult sweep operations. The biggest problem would be teaching the men to detect these minimum metal mines.

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INTERVIEW WITH THE S2 AND INTELLIGENCE SERGEANT  
1ST ENGINEER BATTALION

The S2 and his Sergeant were very cooperative in providing statistics that enabled us to get a better overall picture of the division's mine and booby-trap operations. It was noted, for example, that in a succeeding 110 day period the number of mines and boobytraps encountered were less than in the initial 75 days on two routes. This indicates a decrease in the threat when constant pressure is employed. The yearly figure on casualties shows the seriousness of the mine and boobytrap problem; the combined total exceeds any other single casualty cause. Very little assistance is received from the local people and they have had little luck with the paying for information program. Chieu Hoi's were reported to have been the best help, and to have been quite skilled in spotting mines and boobytraps.

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INTERVIEW WITH THE BATTALION COMMANDER  
1ST ENGINEER BATTALION

The battalion commander was an extremely well-qualified individual who provided what information he could in a brief meeting that was slipped into his busy schedule. He commented on the division's tests of the jeep-mounted detector and the roller, which resulted in unsatisfactory reports on both. Maintenance of the hand-operated mine detectors was named as a major problem, with loose heads being a primary trouble spot. He had instituted a rapid repair system which included working on the detector at night and flying it to user units the next day, to keep the maximum number operational. He indicated that it took a large amount of personal supervision to ensure the effectiveness of mine sweep teams. Problems here were carelessness and rushing. For difficult sweeping operations, refresher training and personal motivational visits were employed to produce top performance.

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INTERVIEW WITH THE NCOIC AND FIVE SWEEPERS  
FROM COMPANY A, 1st ENGINEER BATTALION

This group of engineers was attached to the infantry unit manning this night defense position (NDP), but when the infantry units rotated they remained at the NDP and continued their daily mine sweeping job on Route 13. The engineer NCOIC was well known in the division for his long experience in Vietnam and background in mine sweeping. We had accompanied the group on part of the sweep of Route 13 prior to the interview and had noted the sweepers moving rather rapidly (2.8 miles in 75 minutes). They explained that the speed was possible because the center of the road was generally hard top and only the sides were given much attention. Plus, no mines had been found in this particular stretch of road for some time. The security elements were out and the ditches dug by the rooters were being checked for wires that might lead to command-detonated mines. Strong points were posted as the road was cleared to secure it while the convoys were running. The mine sweepers did not like the PRS-4 because they felt it was too slow and too heavy. They did appear to like the F-153 detector in spite of some minor problems noted. They felt that they could stay on the mine detector an hour and 15 minutes or more without becoming tone deaf and it was noted that they had not rotated the sweeper job on that morning's sweep. They felt that keeping the earphones out from their ears helped them to sweep longer without becoming tone deaf. They said that they relied on visual detection to a great extent. They complained about the mine detector breaking too easily, but they didn't take the cases out with them to protect them. They didn't think this was practical, especially when going through the jungle. However, they did feel that a carrying pack or strap for the detector would be good. They said the engineers do all of the road sweeping, but that the infantry and armor units had sweepers and might have men trained to operate them. Again, the point was made that tactical units often push the sweepers to try to get them to go more rapidly. They said they do not accompany the infantry on search and destroy operations to blow mines and so forth any more, but that they used to. Sweeping in the monsoons was said to be harder and the moisture does seem to have an adverse effect on the detector. They also do whatever they can to fix the detectors themselves to avoid sending them back.

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INTERVIEW WITH ACTING COMPANY COMMANDER  
A COMPANY, 2/8th INFANTRY BATTALION

The First Lieutenant being interviewed had been in Vietnam seven months and seemed well qualified to give the infantry viewpoint on the mines and booby-trap problem. He admitted that they had not had a major mine problem on Route 13 recently. His unit usually just provided security for the engineers and did not normally sweep. He did say that he had some QJT qualified mine sweepers in the company and had done some sweeping in the past.

He said that the infantry's main problem was boobytraps encountered on search and destroy operations. Grenades were the type of boobytrap encountered most and occasionally a man would get hurt by picking up a Chicom grenade with an instantaneous fuze. Command-detonated artillery duds and trip wire activated items in heavy brush were also a threat.

While trained dogs had not been used for some time, a local untrained dog had been used successfully on one occasion to help guide them through heavy brush. Dogs were not thought to be a significant help in detecting mines.

Action taken when a mine or boobytrap was located was to report it to battalion, check it out, and blow it in place. The infantry had to conduct search and destroy operations periodically out from their NDP base as well as provide security for the engineer's sweep teams. The road clearing duty was considered desirable as it gave them a chance to obtain needed rest.

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INTERVIEW WITH THE DIVISION CHIEF OF STAFF

From the interview with the Chief of Staff it was obvious that the mine and boobytrap problem was receiving considerable emphasis in the First Division. Also, it was stated that they would assist the SECMA effort in any way possible. The Chief of Staff felt that mine detection equipment had not received the emphasis it deserved since WWII. He mentioned a number of areas that he thought were worthy of further developmental efforts. He thought some of the developmental items were promising and urged a flexible approach to obtain short range solutions while long range research continued. In the meantime, it was thought that the division must continue to exercise extreme caution to avoid mine and boobytrap losses.

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I N T E R V I E W S

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INTERVIEW WITH TWO MAJORS, ASSISTANT G3 TRAINING

- Q. We are interested in getting a general picture of your division's mine and boobytrap problems and how you attempt to solve them. We would also like to talk to personnel from engineer, armor and infantry units on this subject. Could this be arranged?
- A. If you want we can set it up for you to go out and visit one of the positions on Route 13. There are usually parts of a mech battalion and some engineers at these locations. They have some mine sweeper personnel there and do some road clearing out from these positions in case you wanted to get involved in that. The main element at this one position is an infantry company.
- Q. I think it might be good if we went up there. We'd like to talk to infantry and engineers out in the field, if we could.
- A. This other position is strictly infantry. They've got their own sweep teams and so on because we don't have enough engineer sweep teams to do the job. The infantry is trained to do this sweeping, too. Part of the time, if we're not opening a road on a certain day and we have the engineers in there with us, we have them put on classes to represent VC companies. We tried this and buried a few C-ration cans around, this sort of thing, so that we don't get out of practice. I've personally had to use my infantry and engineer teams to mine sweep. This one outfit, as I say, is a mech outfit, entirely infantry sweeps.
- Q. In other words, they don't lack training?
- A. Right.
- A2. I was going to say, that I had a squad of sweepers in my old unit. I don't know what number and I don't know how well they're trained, but here again, they're primarily used to train the other men.
- A. That's formal mine sweeping training.
- Q. Do the personnel from the 1st Engineer Battalion do this training?
- A. Yes, there are usually the engineers that are attached to the tactical unit. I think you'll see, when you go out in the division's area. They have an area, a road network, where they sweep in the open and on occasion they have to use a company of engineers and a company of mech. We go up the normal land supply lines and clear and secure them as we go.
- A2. This will take a tremendous number of people to sweep it. We may use the cav, the mech and the engineers. Then we've got the people to make it.
- Q. Do you have any idea what your casualty figures are from mines and booby-traps?
- A2. I do not, but you can probably get that from the engineers later.

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- A. I think the engineers have the figures and our people have about the same.
- A2. Why don't I go on and show you the basic road search formation that we use and explain how the sweepers operate. This is put out the same way to all units. We have a division mobile training team that does this. They work on infantry tactics, mine sweeping, and road clearing which comes under the heading of Infantry Operations overall. What we use is a "V" formation with security elements on the sides and sweep teams in between (see sketch). Now the distance that these security elements go out on either side will depend on how far the road has been cleared. You'll notice when you go out tomorrow that Rome plows will be going down either side of the road and clearing out 200 to 300 meters back from the road, depending on the use the road gets. The more it's used the more there is cleared out. These security elements we'll place on either side; the base of the team, back on the center of the road. There'll be an armored vehicle on either side of the road in the rear of the "V". In the center of the "V" now, we will put our searchers. There are usually infantrymen who'll have a section of road to search visually. In this particular situation, they divided the road into thirds. They echelon these guys to one side and they'll each take a third of the road. They will walk along looking for fresh digging and signs of movement, and also try to clear off any brush. Frequently we'll run into brass, piles of brass from the day before when we reconned by fire. They'll pile up this brass and clear this off the road, this sort of thing. And these searchers are finding a lot of mines by spotting these fresh diggings and checking the brush along the road. You'll also notice, in some instances, Vietnamese driving down the road and going around a particular area. They avoid a little mound in the road so the searchers check them, too.

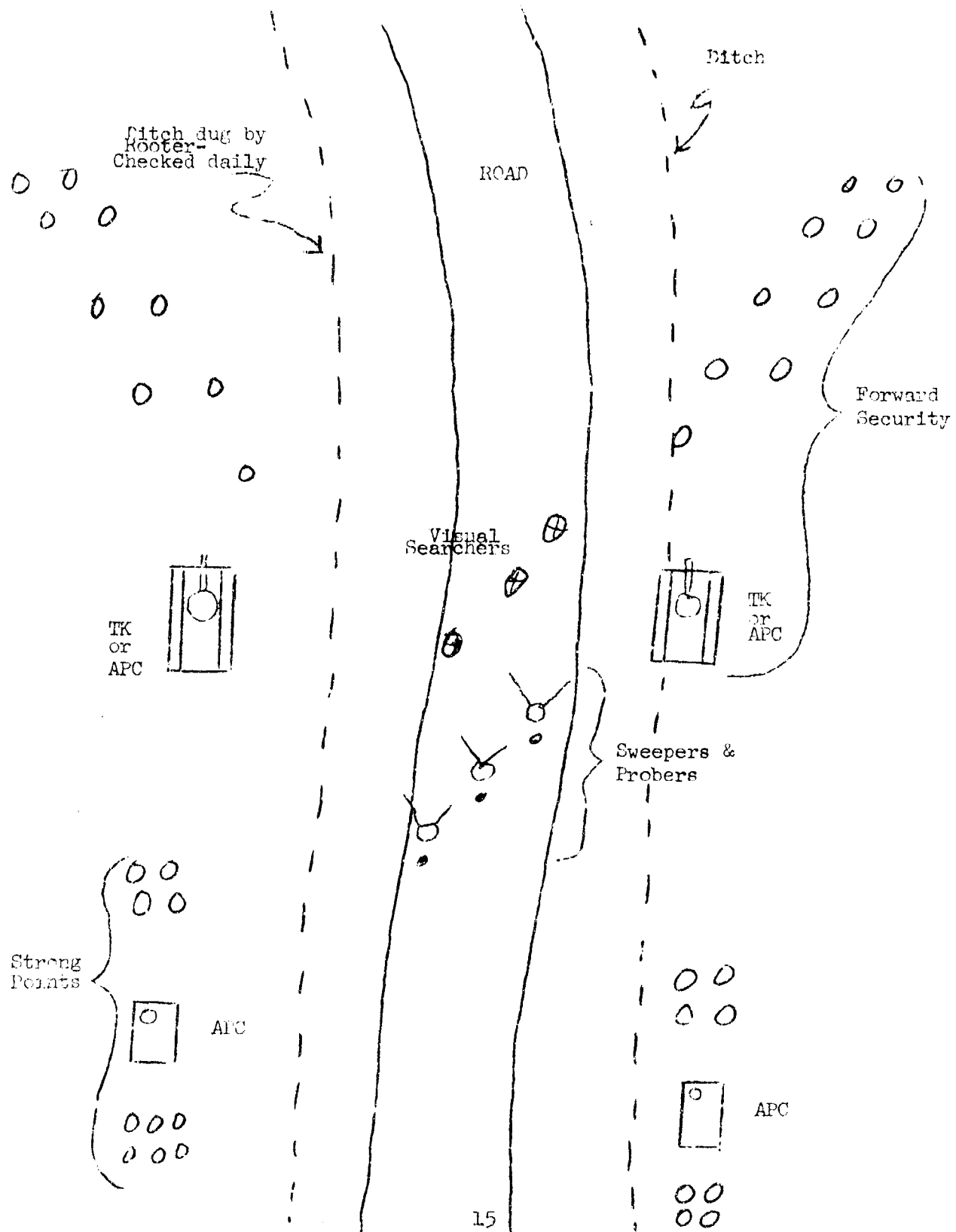
Q. This is all visual detection?

- A2. This right here is visual detection. Behind the searchers then, we usually try to keep about 25 to 30 meters between all of these sweep teams. We also echelon the sweeper teams to one side. The total is normally three teams. Here again, they divide the road in thirds and they walk down their particular third of the road getting the bank, getting the ditch along the side of the road and the embankment. They try to sweep up there because some have been placed in the side of the road or the side of the bank. Now a sweeper will be followed by at least one probe man who will probe for anything that he sees. We have tried to speed up this operation, and here again this time factor will probably be of interest to you. You know, the battalion commander is given a time when he has to have the road open and he's up there pushing and jumping on us about it. The formation can only move as fast as these sweepers, so you end up pushing the sweepers. You try to think up ways you can get them to move faster. I forget what the school teaches you as to how long a man can operate, but it's about 20 minutes to a half hour. All of our operators operate under an hour, but not much under it. Usually these engineers work in two-man teams so the prober

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1st INFANTRY DIVISION MINE SWEEP FORMATION



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behind a sweeper can stop and change off and they do switch the thing off there. We have also found that by having the infantry train along with this sweeper, I can tag one of them on. So instead of a two-man team they'll have a three-man team.

Q. How does this help?

A2. It gives you two probers. One can probe a spot that the mine sweeper finds and the sweeper himself can move down the road and still have a prober behind him when he stops at the next suspicious spot. What you'll get if this team stops and digs for something while this one keeps on going is a big accordion effect. It's better when they both are going at the same rate and there'll be probers back there. Also maybe I'll take an extra sweep team if I have the mine detectors and keep it behind waiting for a slow lane. They'll come up to the front and continue that lane on. We find that we can make up our time this way and still not push the sweeper. So in effect, we double the time. We'll ask the operator what he thinks he can do and go along at that rate. As a commander, you've got to watch these mine sweepers because if they run into a stretch they've gone over for a few days and haven't found anything, they start to go fast. You can see them start swinging the thing from side to side and not paying any attention; they're just out for the walk. You've got to watch them. They get bored and they've got to be brought back to reality.

Q. About what would be their rate?

A2. Well, here again this is a difficult question to answer. The first few days when we open a road, it's comparatively slow. I would say probably 400 to 500 meters an hour on the first couple of days, because you get a lot of metal scraps, C-ration cans, and shrapnel from H & I fires. Every time we hit some of this, we have to stop and probe it out. Each succeeding day you pick a lot of this everyday trash out of the road and you'll notice that the rate is speeded up a bit. It could also be cockiness on the part of the operators, unless you hit a few mines. Then they'll slow down.

Q. Well, does the sweeper necessarily stop when he hits something like this or does he point this out to the prober and proceed?

A2. If he only has one prober, he can move ahead, but not much. At the next thing he comes across he's got to stop and wait for the prober to catch up to him. That's when we start this one lane stopping while another is going and they just coordinate and probe. Now out to the sides, we would have the company spread out and everyone on outposts. We'll have one or two platoons on either side and they'll drop off outposts. So these people are working in a relatively secured area against enemy activity. Their main occupational hazard then is the mines in the road itself.

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- Q. Are these strong points put out before they sweep, as they sweep, or what?
- A2. Usually, they are just going along simultaneously as the sweep goes. These are the first elements on the road and to the side you've got your infantry platoon. They will be dropping off at these outposts as they proceed down the road. They'll all be moving down the road and they'll drop off outposts.
- Q. Then once the road is swept you want to keep it secured so that nothing else happens?
- A2. Exactly. Then at the end of the day, we just reverse and load up.
- Q. Do these people on the outposts keep eyeball contact on the road and with other outposts?
- A2. They keep eyeball contact with the road. Now how far off we can't particularly say, but they'll keep eyeball contact with the road. We try to keep them awake and there are various times when the leader goes around and kicks them in the rear end. You'll also find contact patrols moving. We have these on both sides and to the rear. Also from day to day we try to put a different platoon in the positions. If we have a platoon on this side today, we'll put it over here tomorrow, rotate them around to give them a little variety. They'll keep eyeball contact on the road, but not necessarily with each other.
- Q. Do you do this the entire length of your road?
- A2. We do on the days we clear them and run convoys.
- Q. You would have to have considerable space between outposts.
- A2. Yes, 300 to 400 meters, something like this. But the road is kept under observation.
- Q. Would you venture to say this is the majority of the road?
- A2. Yes, the major will explain this when he goes into our tactical operations. He'll explain what roads we have to outpost and what roads we no longer have to. A year ago we had to outpost in this fashion, but now we run a tank down the road to clear it. We just slowly move it forward for a visual inspection. But you'll find throughout the division that this basic search pattern is the pattern that's used. The idea is to put out as much security for these people as possible so they can get on with their individual sweeping jobs and not have to worry about somebody getting shot at or running into a Claymore or what-have-you. This formation will chase out any enemy and find any Claymore wires. Additionally, we cut a rooter ditch. This is a ditch about 18 inches deep and about 6 inches wide that's cut by a plow pulled behind a track vehicle. You run this down the side of the road, just to the outside of the road, and that way you'll be sure of cutting any command-detonated mines.

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Q. Do you still do that?

A2. No, we don't do this daily. But if there's a road we haven't used in awhile, they'll report this and then we'll put a man on this ditch daily. He'll go down and check the ditch out for any wires that have been laid in there or something like that so that by the time the sweeper gets down there, he feels assured that all he has to worry about is the road itself. The area is flanked, secured, and flushed for snipers, command-detonated mines, Claymores, and everything.

Q. In some of the other places we've been, it seemed like the sweepers were detecting more mines visually than they were with the detectors?

A2. Well, this could very well be. This is why we put these rooter ditches in. It's relatively new, within the last six months when we started this. So these people do a couple of things. One, they get the C-ration cans, the trash or the metal off the road. Also, they get used to going over the same road each day. That patch of road will become known to them. It will be like a puzzle. He searches 2,000 meters every day and he can see that same third of the road. So he'll begin to tell if there's a new mine along here. Perhaps he'll notice a rut in the road or a wagon trail that's suddenly broken in one area where yesterday it was not. Something of this nature. And they are finding a lot of them this way. In the rainy season the individuals' detection problem is doubled because the rain will knock out a lot of these known signs. We'll have a rain at night. Therefore, any trail left from the day before by tracks or signs will all be washed away during the rain.

A. Also, they'll normally put their mines in a mud puddle or water. They dig down and the water covers them. And of course, the roads are mined over, so there'll be mud puddles all around.

A. Now, let me give you a little briefing on our area of operations. We clear Route 13 from Lai Khe to Quan Loi. We have a brigade base camp at Quan Loi, so this is our land line of communication on Route 13.

Q. How far is that from Lai Khe to Quan Loi?

A. That's possibly 50 kilometers. Before September or October, we only opened this road to get the supplies in to Quan Loi about once every six weeks. They'd run convoys for maybe a week and then they would close the road--take the battalions back off the road and operate in other areas. When I first got here about six months ago, it took approximately seven battalions to clear this road. Each battalion would have approximately seven clicks of the road to clear and secure. When we started out in October to secure it, we had two battalions up here below Quan Loi, two battalions south of Chon Thanh and the cav were responsible for this area in here. We have this down now where we put companies on the road in company-size base camps and give them zones of responsibility. We have started from Lai Khe and these night

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defense positions (NDP's) are numbered one through 11, nine of which are on the road. Numbers one through nine are on the road and they're just scattered around in various areas. These are company-sized. Sometimes they're battalion sized. They have been operating since November and the road has been open since that time. The bridges are maintained on a daily basis. If there are any holes blown in the road, the engineers will come either down from Quan Loi to fix it or up from Lai Khe. Now this, of course, is probably where the greatest threat is. This land line of communication extends down south through here and into Di An. We have a brigade base here at Lai Khe and we have our support command located down at Di An. Supplies are moved up this road on almost a daily basis.

- Q. Are you responsible for securing all that road from Lai Khe to Di An?
- A. Yes, we are. However, we don't put U.S. troops on there. We use the ARVN and the ARVN outpost takes a portion of the road. They also post some other roads in the area. We actually use only certain roads regularly, like the green road. The red and yellow roads are open on an occasional basis and this reduces the mine probability. Anything else in here requires troops to be moved over and you go through the business of opening the road. For example, the 101st Airborne is at Phuoc Vinh. They have a brigade there and their line of communication is down like so. We have opened the road for them, this is Route 1A, and it has to be outposted from Phuoc Vinh all the way down as far as it fades out. We have run convoys both ways, from Lai Khe across to Phuoc Vinh and back, up and down. But normally, the only normal route that can be used on a daily basis is Route 13. These others have to be opened with special operations and, of course, this is done periodically. Phuoc Vinh is primarily supplied by air. It's always been that way. That's it basically. We have moves that don't require escorts in this area and that would be, of course, down below here. From the Long Binh depot they run this road into Saigon without convoy. We can run from Di An to Phu Loi. Phu Loi is a bit larger. We have only four bases.
- Q. Those nine companies that you have along Route 13, do they belong to specific battalions that have the road security mission?
- A. Yes, however, I would say they're mixed up. You see, we have four rifle companies in our battalions, so the battalion operating in this area may be operating as a battalion and it's fourth rifle company may be on another mission.
- Q. So it could go to the battalion that has the official mission of the road security or something like that?
- A. Well, it's definitely going to the road, but it doesn't go to the battalion's base. The battalion's base are with the brigades.
- Q. I see, they don't have their's separately?

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- Q. No. The brigades have three battalions each, but they seldom go back to their bases. There's no reason for it.
- A2. This week you may have a battalion on the road security mission, and next week they'll be out in the jungle some place. Another battalion will come back from the jungle and go on the road. You change their operation.
- A. I don't know how many of the other divisions in Vietnam do this, but we can take any battalion and put them under any brigade and do most any mission.
- A2. I do know some of the divisions over here have brigade areas and three battalions in that brigade stay there. A battalion will seldom work for another brigade. We don't work that way at all. We have our operations so standardized that any company will use the same system for opening roads. Any battalion can go from this brigade to that brigade, and when told to open that road, they'll do the same thing. It doesn't make any difference. All of our battalions have the ability and the capability to get that road open for any brigade. They're all done the same way.
- Q. Is this whole road swept daily?
- A. Yes, when it's opened.
- A2. Every day or four out of five days.
- A. You see, they don't run convoys every day. Maybe they don't have to or they don't want to. But when the convoy's scheduled, they clear that road. That's from Lai Khe north all the way to Quan Loi. It's always swept. The mine sweepers go out on that.
- Q. What about the days that you don't sweep? Is the road closed to all military vehicles?
- A. That's correct. Any time the road is closed, these people stay in their bases or conduct reconnaissance-in-force operations. Civilians use the road any time.
- Q. Then you really have the advantage of a civilian mine sweeper on the road?
- A. It would seem that way, but actually, that's not the way it works. You see, their devices are such that they only go off from heavy loads on them. What they use would be about a 30-pound mine and you have a nail and a piece of wood. You can hardly push the damn thing down. So the civilian vehicles would not usually set those off.
- A2. A bicycle might do it.
- A. Usually a Vietnamese bus will hit a mine that was meant for one of our trucks, and they do a pretty good job on them. But this is unusual. They do have some very big trucks and some buses that they use.

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A2. Very few times will you see a civilian vehicle on the road when it's not cleared. However, they do it some.

Q. Are you picking up quite a few mines along the road?

A. Initially, yes. After you have been on an operation awhile, the mines get less and less and finally you pick up very few because you do this on a daily basis. Now in addition to sweeping in the daytime, we've got about six radar locations on the road. The road is pretty well covered with radar at night and they pick up movement. When they do, they put in artillery or mortars. They keep the road under surveillance at night and we use the searchlights and intelligence. We have the one where you can switch it from infrared to light vision. So it's pretty well lit up.

Q. This H & I fire used on the road, is that HE or WP? Up north they were doing the same thing only with WP to keep the metal off the road.

A. Well, yeah, that's true. You get the business of putting the metal on the road but that metal wouldn't stop a battalion commander. So it wouldn't be that much of a problem.

A2. We don't have any division policy which forbids using HE, so it's not that much of a problem, I guess.

Q. What type of observation posts do you put out at night? Do you have anything that would even approach complete coverage of the road at night?

A. No.

Q. Where do you locate your radar, just at critical points?

A. Yes, the radar is located at critical places along the road. For example, you could say there is one at a bridge and there's one up here. They're located at critical points and they're located not too far apart. I can show you on a map where the locations are. The radar is in a good location because there things are set out by design. They don't just throw them out there. A big study is made on where you can open the road in a minimum amount of time. As for seeing from one to the other, some of them might do this, but you can't see around a corner, for example.

Q. That's very thorough and very complete. How big a problem would you say mines are to you now?

A. I can't say that there is a problem with mines on Route 13 as of this time. Now here is the same road on the map. Here is Lai Khe and then there is the gate going north. So from here to Quan Loi the road is swept. Here are the night defense positions spotted all the way up.

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- A. The radars cover at night from these positions that are either company or battalion minus locations.
- Q. How about airborne surveillance at night?
- A. Well, not primarily on the road itself, no. The G2 has the SLAR and the infrared with their Mohawks and these are flown on a night flight.
- Q. Do they fly the roads?
- A. They might fly them once but, remember, they have to cover the whole division TAOR. So they won't spend all that night flying up and down the road. They fly missions based on intelligence of the previous day. This road is a day-to-day operation which is no big thing right now. What the big things are now, of course, are locations of the VC elements and that's what they're really looking for.
- Q. It could be considered security, but each one of these night defense positions will put out a couple of ambushes. These are in the proximity of the camp. They don't go a long way out. They've had some pretty good luck along the road here, not so much catching VC mining as catching carrying parties simply trying to get from War Zone C to War Zone D. This Route 13 really cuts their communications and establishes ours. There is this element out there that could be somewhat of a deterrent to them putting a mine in the road.
- A. The road is very strategic. It's probably the most strategic terrain feature in the division area because it's lain astride these two war zones, and, of course, we do catch people going back and forth.
- Q. What type of mine problem do you run into when you have to help clear a route for someone like the 101st?
- A. A lot of problems. For example, this one place is called Claymore Corner. It's on the road from Phuoc Vinh to Lai Khe and that route is quite extensively mined. They go in there and then they take all these troops away for maybe a month or so. Then when they go back in, they find a lot of mines again. This cav unit had this mission one time. They were up here with their tracks and so forth and they had come from a different area. They weren't used to it evidently and they wouldn't keep their tracks on the road. They'd run all over the place and they lost one. Any time you get off that road once it's swept, you're asking for it. The only place you should think of trying is where it's swept. If you don't sweep it, you don't take your tracks on it. Of course, we never do this and we don't lose any. You know, we know where it's safe. So we sweep and then we go on with the tracks. But they were running all over the place and they lost one of their tracks.
- Q. Do you have any trouble operating on mech operations when you get off the road?

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- A. Not too often. You see, if you would take the mech out into an area of the Delta, there are no mines, you know. If you took mech into a built-up area, you might find some. What we've done is taken Rome plows and cleared all the jungle area down here. We spread it out. All of this has been cleared in several areas. As a matter of fact, we're clearing the road back 400 meters on either side.
- Q. It's probably a big help in avoiding ambushes, too, isn't it?
- A. Yes, we've reduced the threat. When you start clearing an area, of course, you'll hit mines. But after awhile, you will clear them. So I would say the most mines that you'll find in our area will be found along the road to Phuoc Vinh past Claymore Corner and down this way. This is where you'll find the majority of the mines. Of course, they're all detonated by the time the convoy comes. And since I've been here, we have never lost a convoy vehicle due to mines.
- Q. That's amazing! How long have you been here?
- A. Eight months. Now when you're repairing a road, you have vehicles moving off the road. I'm sure somebody is going to shoot me down here because somewhere, sooner or later, there might have been a big low-boy or 5-ton truck that hits a mine. You know, maybe one. But still, 99%, I'd say, of the convoys on a daily basis get through without any problem. People that lose tracks are your mine sweeping operations. You were told about the tanks, the PC and so forth. They sometimes hit them when you're clearing.
- Q. When you're pulling off to outpost the road, do you put tracks in the outposts along the road also? If so, how do they move off the road without hitting a mine?
- A. They can get off the same place today as they did yesterday, and if they do they'll find something waiting for them out there. The most common way to lose a track, really is when you sweep. You have that old mine sweeper, it's a WWII thing isn't it, and the detector can't pick up the mine. The mine is wrapped in plastic and it's 30 pounds of TNT. It's a large circular thing and the only thing you can pick up is this little battery. And if you don't pick the battery up, that's it. So you can roll a tank over here and you can blow a track. Of course, what they normally do is employ their mines in pairs or threes. They'll put one off the road and two on the road. So the tank hits one. Then your recovery vehicle goes down to pick it up. If he goes off the road and around to pick up the tank, he gets it, too. The VC know this; that's why they do it. So not only do we sweep the roads when we go up, but when we come back we'll sweep the shoulders. Going up you sweep the roads; coming back you sweep the shoulders.
1. When your sweep teams go out, do they move out from all three

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- A. Right. They'll spread out to all these spots. Then they'll move towards each other and meet at different places along the road.
- Q. You have enough men and sweepers to work out of all these positions?
- A. Oh, yeah. We have four mine sweepers in each rifle company and we have four mine sweepers in the battalion headquarters. So each mine detector has a team that we train ourselves. These are not TOE. As a matter of fact, the mine sweepers are not TOE.
- Q. That's true, you aren't really authorized so many, are you?
- A2. No, but we have them. That's because we've trained the best personnel on them and we acquired the equipment.
- A. On training, the engineers are the only ones with the ability to conduct formal mine sweeping classes. Our battalion used to use the engineer battalion to come down and hold classes.
- A2. If you have a big effort on mine sweeps, of course, the engineers have the direct-support mine sweeping teams. We take the teams that are freed to us and give them to battalions. They might give us three engineer teams to a battalion and we'll just simply deal them out because the battalions can run them with their own resources. So they usually have them.
- Q. Is the major portion of Route 13 being done by the engineers would you say?
- A. This is all done by infantry and engineers. They would not have the capability by themselves.
- A2. They don't have that many mine sweepers.
- Q. Then it's necessary to use the mine sweepers from the infantry outfits, the mech, and the cav units?
- A. Most of these units have mine sweepers. I don't know how effective a percentage they have but they had two or three per platoon. They need them to get their vehicles on and off the road without hitting any mines. Of course, if they have the mine sweepers, they'll be used on the road, too. We require battalions to maintain mine sweep teams. The way they do it, of course, is to give teams OUT. Or if the battalion hasn't been on the road for awhile and they get a road clearing mission, they will ask the brigade for help from the brigade engineer company. Each company has mine sweepers in it plus NCO's who can instruct. If there's a build-up in the battalion, they'll gather up their mine sweeper people and they'll give instructions. So the engineers do conduct classes on mine sweepers and they do it on request of the brigade. The turnover rate in the men is pretty high. We are finding by having this road opened now for such a long period of time and rotating the units, we can maintain this expertise in sweeping. We never leave a unit out there very long.

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We always rotate them. This is nothing more than training on mines. Like I say, when we used to close this thing for a month or six weeks, then we had to go back and train our people before we went back out there. We have had a demand on mine sweeping instruction since we've been doing this, a real big demand.

- A2. As a matter of fact, the engineers had a mines and boobytraps school related to this. They haven't had the demand to go through it since this operation's been going on. I think they formed a school back in November.
- A. Other than that, one unit had five schools going. They'd run one cycle every two or three weeks. The battalions are doing a little bit more of this now. All of the battalions are doing it. You don't get the large gaps in your training any more.
- Q. More on a centralized basis now?
- A. More and more every day. Our division probably has the longest land line of communication of any division going. We have the only main road in our division area and it runs from Saigon to the Cambodian border. At one time the road was open all the way to Loc Ninh. We had convoys all the way up there.
- Q. Don't you go to Loc Ninh any more?
- A. No, we have no military up there any more. When units were operating up there, like we used to have an ARVN camp there not too long ago and they had Loc Ninh as a base, they opened the road from Saigon north and convoys were going all the way up there. That's a pretty long stretch. But we really pride ourselves on our success at running convoys, which probably has nothing to do with opening roads as far as the mine sweeping goes. They run a regular schedule, just like a regular train, and we accomplish it every day. They have checkpoints all the way up and they hit those check points. They have MP's, front and rear, and they meet the times at the checkpoints or they are ahead of schedule, one way or another.
- Q. Just like a stateside convoy?
- A. That's right, that's exactly what it is. If it's late, you always have some general flying over and they keep track. Each general officer has the route and the checkpoints in his helicopter and he's got the schedule. If one of them is late he'll fly over and want to know why.
- Q. Have you had any ambushes?
- A. We've had no ambushes against convoys on this road since I've been here in eight months. The most common things they'll have down here is a sniper with a rifle taking potshots. It's getting harder and harder for him to stay in the jungle because he has to shoot from farther and

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farther away. What he's shooting at is the people outposted on the road rather than the convoy itself. As far as against the convoy, no, none. But as far as against a bridge-building team when you're first beginning, yes. This bridge was blown back in August. It was a pretty good size bridge and we didn't build it again until September when we opened the road. I was down there on the bridge and we had these tanks along the bank for security. You see, the road wasn't opened at the time. You go down there with a task force and you build a bridge. You take all your equipment with you or you fly it in, build it and then you go back. And we had a VC who fired at us. He fired but he didn't hit us. Since they have widened this cleared area back from the road, you'll see that it's just almost impossible for them to snipe or have snipers fire.

- A. Now we've been attacked along Route 13. These NDP's have been attacked but they haven't been attacked recently. The last one, I believe, was on 10 December right here. There is, of course, artillery in the NDP's to help fight off the attack. That's another thing. The road is covered with artillery from the top to the bottom. There is nowhere you can go along this road that you cannot hit a 105 artillery concentration. So you have the artillery in these positions along the highway. The artillery here has the mission of covering and keeping the road secured. There's usually about 10 kilometers between the 105 positions. These people were attacked by a battalion of NVA's and they only had a rifle company. They did have two artillery batteries, 155 and 105. They killed 154 NVA's and had one man killed. This position was in a perfect circle in a wide-open area, wire and everything, and they just murdered them.
- Q. Was that artillery using direct fire?
- A. No, for some reason they just couldn't do it. They were prepared to fire direct fire, but they never did. What they mainly do on something like that if they can't shoot direct fire is to use a 0 or a 1 charge, loft the round up like a mortar at a high angle, drop it down 300 meters out, and just blow the hell out of them. We call that CBT, Controlled Battery Time. It's not armed until just before it goes off. This proximity type is armed and we don't use that over the heads of friendlies because it's armed and it goes off like in the rain or something. And, of course, they all have the beehive. We've even gotten indirect beehive. We had one rifle company hit by one battalion. They left 154 bodies, so you can figure they killed more. Those are the ones we picked up. Let's see, there was a ground company hit here and, I think, a rifle company hit here. In any case, we had not more than one or two. This other was a full-scale attack and we killed, we think, over 200 VC along this road by them attacking us.
- Q. They're probably real unhappy about you're security along the road?
- A. It's pretty tight security, it really is. The first month or six weeks they were really out for us. They really stormed our sides to get across.

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But the radars are up there so we could shoot at them if they tried to cross over.

- Q. What time does your road open up in the morning?
- A. The convoys normally start about 9:00 in the morning. The roads then will be open by 9:00 normally.
- Q. Is there any set schedule on what days the convoys will run, like every Monday, Wednesday and Friday?
- A. No. We couldn't do that anyway because they'd probably catch on. We just run them. We might run them four days in a row and quit. We might run them every other day. There is no such schedule.
- Q. What happens to the rest of your tactical operations when you have nine to 11 companies outposting the road?
- A. Well, if you've got nine battalions in the division and you've got eight of them with four rifle companies, that means that you've still got eight battalions operating and you've only got the equivalent of one-fourth rifle company on the road.
- Q. So it doesn't hurt you too much. But you don't really do it that way. Don't you actually have controlling battalions?
- A. You might have about 1 1/2 full battalions, a battalion headquarters and a company attached.
- Q. You will never have more than two battalions on this mission normally?
- A. As a matter of fact, I could probably show you what is current right now. Starting from the bottom, we have about nine companies and two controlling headquarters. In each of these NDP's we have some mech elements cross attached and, of course, the artillery.
- Q. By the way, do you try to harden your vehicles in any way by using sand bags or extra armor?
- A. Yes, we do use sandbags on the floor of the vehicles but actually we don't ever move troops by convoy. They go by air or foot but not in a convoy.
- Q. Could you tell me how you do your replacement training and any other type, like NCO training?
- A. We have five schools at our five major bases that are similar to the one run by our 3d brigade here at Lai Khe. They have about a week's training for replacements and we think these decentralized schools are good. What happens here is that the new men come in and are assigned to

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their unit. They go to their unit and draw their gear and are made to feel like they are now out of the big impersonal replacement stream and belong to someone. Then they go from their unit to the brigade school which is in the vicinity of their units rear base. Most of them return to their units to sleep at night. We think that psychologically this is a good thing for the man, to let him feel like he has arrived at his home unit before you sent him to this school. We also have these mobile training teams that go around to the units and give training on any special things, such as new weapons or new techniques. This way the division can have standardized instruction, but we don't have to bring the men back from their units to get it. We take it to them.

Q. Do you find it difficult to support these five schools adequately?

A. Well it is a problem and we can't always get men for the schools who not only have combat experience but are also good instructors. However, we think it's a better system than having one big division school where the men are more or less still just in the replacement stream.

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INTERVIEW WITH AN INSTRUCTOR FROM THE 3D BRIGADE COMBAT INDOCTRINATION  
SCHOOL

Q. How long is the school?

A. The school operates for five days. They give us an administrative orientation on Sunday, and the hard-core instruction begins on Monday and follows through till Friday afternoon. This gives us 24 hours to reset all our classes.

Q. This course is for replacements, right?

A. Actually, it's a mandatory requirement for all replacement personnel in the 1st Division and we get people for training who come in with as little as 59 days to go in the country.

Q. What are they sent here for?

A. For the same thing, to find out the new fighting techniques and tactics.

Q. They have people come back through here at that time?

A. We had one guy through here two weeks ago who had been to the 9th Division school, through the Americal Division School, and was just now coming to our school. He had 59 days left to go in the country. We're not trying to flatter ourselves, but they've never gone through the school without finding out something new.

Q. I suppose that's because everything changes so much?

A. Well, not only that, but you can go from terrain to terrain. You can go to the Highlands and find one type of instruction and one type of fighting required; you get down here and you've got another thing; and you get down south in the swamp lands and you've got an entirely different setup.

Q. What do you give them in the way of mines and boobytraps? Could you just kind of summarize the instruction?

A. Well, we give them two hours of formal instructions on mines and booby traps. That's directly off the platform. We acquaint them with the concepts, the various types that they run across and what to do about them. We try to convince them, if nothing else, to leave the things alone. And then in practical exercises for an entire day, all of Thursday afternoon and Friday morning, you have this stuff in his problems. That is in conjunction with their patrols and their efficiency in search and destroy and road clearing. You constantly run him through booby traps and trap devices, mines, mine clearing. So in actuality you could say that they had a total of 10 hours of instruction and practical exercise on mines and boobytraps.

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Q. Integrated in those two four-hour tactical problems?

A. Right, and I would say that of all the instruction we give, it is probably the most thoroughly integrated throughout the entire course.

Q. Could you tell me some of the ways that it's integrated in those problems?

A. Right. One of our basic instructions here is on the roads and trails. If somebody else has not run them, we tell them to stay off the roads and trails. So, we will heavily lay in our trip devices and whatnot particularly along the edges of roads and trails, the entrances into clearings, and such things as this to simulate the Claymores which Charlie has at particular points along roads and trails. So everywhere they travel, wherever they go, they will run across this type of thing. Then there are several particularly tempting areas in their route of travel--entrances into a swamp, for instance, which has a large clearing. It's almost like a picnic area and in this area we'll lay such things as canteens, wrist watches, billfolds, and just sort of leave things strewn around the area. And this is where we use the double and triple boobytrap devices, like the canteen caps with a trip wire slack. They will see this and they will say, "Well, obviously it's been tripped and it's dead." So they reach down and pick up the canteen, and there is a pressure-release device underneath the canteen itself. So that's on this first day, on Sunday afternoon. When they get into the road clearing we use simulated antivehicular mines in the road and also command-detonated Claymores.

Q. Are they detecting these simulated mines visually?

A. Right. In normal mine detection, you have your three searchers forward with your detection team anyhow. So all we do is tell them, "All right, we're going to be simulated and you're searchers and we'll let the mine detectors take care of themselves." Believe it or not, they do pretty good.

Q. Do you teach any courses other than just for the replacements? Do you have anything for NCO's or anything like that?

A. No, but to be frank with you, we have published repeatedly, time and time again, that our instructions are available to anyone at any time about anything. If we don't know the subject and don't already have it in existence, well, we'll work it up and research the instruction. The response to this has been very, very poor, mainly because sometime in the past the reputation of the brigade-level school might not have been considered too good. Now we have a bunch of instructors who really hump and we have it pulled together to the point where we can do this real well. The biggest response has been from the support units like the 121st Signal, and the 33d Artillery. These types of units have responded quite well and have asked several times for us to come down and give instruction. We've also given several orientations to

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various division staff personnel. They come over here for their briefing critique.

Q. A lot of the divisions have some training set up for their potential NCO's. I'm talking about the PFC's or the SP/4's who are about to make it as fire team leaders or something. Do you have this?

A. The division mobile training team does this. The concept is that they are to go to the people--the fire team leaders, the squad leaders, and sometimes as far as the platoon sergeants--and are to give them a polishing course on what they need to know. But as it turns out now, I think they're being used more in the role of a testing organization where they go from base camp to base camp checking us out. That's to find out whether we're adequate or not.

Q. What does this mobile training team consist of?

A. Well, in essence their qualifications for instructors are the same as ours and they're five strong. Their concept is that they can go wherever the troops are. Where they see an NDP, an LZ, or a base camp, they can move out to these areas and constantly continue the up-dating of instruction. As I say, if the man's out in the field for 30 days, he's out of touch with things. It seems like the M16 care and maintenance is continually being up-dated. The defensive fighting position has changed three times in the last three months in varying degrees. Then there are the concepts of airmobility, mines and boobytraps. The search and destroy operations. All these things are constantly changing. The idea is to bring this information to the field, but we find it's not always happening. We get some people in here from the field and we find we're speaking of brand new things, when normally it should be old stuff to them.

Q. Is there any training on the mine detectors?

A. Not since we lost our detector awhile back. We had to turn it in. We didn't lose much. It was a WWII detector. But it was the idea we had a detector.

Q. What type was it?

A. The old type that utilized the battery power source and the entire thing was all in the back pack and had a jointed handle.

Q. Was that a nonmetallic PRS4?

A. No, it's strictly a metallic detector.

Q. That's the PRS3, big tubular handle?

A. Right. And we've been told that all we have to do is just turn the things in and we'd receive them right back with no problem at all with

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no loss of a detector. But somewhere, someone along the line said we're not authorized to have one.

Q. From what we've seen your division has pooled all these detectors and has them out working.

A. Well, what we run across is some company buzzes us and asks us, "Have you got anything you can give us quick on a mine detector?" They'll get out there in the field and find out that they don't have a detector team available, but they've got detectors available. So they put them in the hands of these guys out there who don't have the vaguest idea of what they're trying to do.

Q. Wouldn't they normally ask the engineers to help train them or to do this for them?

A. The engineers complain about the fact that the infantry doesn't know how to calibrate the mine detector and the infantry's often the one that has to use it.

Q. Then you think that the infantry's often the one that does use it?

A. And they have no chance for training whatsoever.

Q. Have you been given the mission of training them here?

A. Our training here is the sole training that an individual gets before he goes to the field. Oftentimes, they'll get out there on Friday afternoon after 3:00 and by 4:00 they'll be in the middle of an LZ.

Q. We were told this morning that some time back they did conduct training on mine sweepers; the engineers had special courses for the infantry.

A. Yes, but this was purely on an allocation basis at Di An only and the allocation was generally filled by the troops at Di An themselves, sort of an R&R thing. Just like the EOD school. Any time you had a guy on line for six months, you'd take him out and send him to the EOD school so he could get a break. EOD is another big sore spot right now. We have an hour of EOD which is no where near enough. There's supposed to be an Engineer school down here teaching EOD and there's supposed to be an EOD detachment up here. And yet, when it comes time to teach these people demolitions, their sole instruction is coming out of here. And the only demolition potential they have on this post is in one of our instructors happens to be able to go down and do it.

Q. Would you be able to give me a lesson plan on mines and boobytraps that you use?

A. Yes, sir, I believe I can.

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Q. I understand that you had to stop using that boobytrap lane because of the mortar fire around the time of the TET offensive. Do you think you'll get your boobytrap lane back into operation when things quiet down?

A. Oh, yeah. As a matter of fact, I would imagine probably this weekend. Right now, we're three instructors short and things are a little hairy with everything in a mixed-up state. But this weekend we'll have all day Saturday free. Possibly we could set up the lane at that time, if things stay clear.

Q. Where's this done, outside the perimeter?

A. Well, no. At one time we had a boobytrap lane right out here behind the stage and the remnants of it are out there now, a couple of punji pits. Generally what we do is boobytrap this Section C of the operation. That's just inside the perimeter. We're the only school that teaches completely inside the perimeter. The reason we do this is because many of these guys are cooks, bakers, truck drivers, and all this junk and if you take them outside the perimeter in an ambush where they definitely have to be on the ball and be ready, you have no time for instruction out there. This is the real thing. It's too late then to be doing any teaching. So what we do is go down and break apart an ambush patrol and instruct them in place so everybody sees what it's like. They all get the feeling of it, they all have the experience of it, and yet we control it. This is the main difference. You can't take a bunch of these guys out, throw them into an ambush patrol, and expect them to learn.

Q. About what size groups of replacements do you usually get through here?

A. Right now, our average class is about 125 since the 1st Division headquarters moved in here. Previously, we kept it between 50 and 60.

Q. If they consolidate into a division school, I assume you'll be getting all the division replacements?

A. Yes, in concept we'll be getting them. In other words, the replacement depot will send them to us for instruction and then from us they'll be sent out to the units. Like right now, the people we are supposed to be catching we're not catching. We have a great many units here that use them to fill sandbags and are pulling them immediately for this kind of thing. We had 14 of them in the class this week from the field and that's the first time since we were formed that we had people come straight into a unit and get deployed out on reconnaissance patrols. And they found out, as these other people are finding out, that without some type of instruction somewhere along the line they're completely lost.

Q. Don't they send these LRRP men down to the recondo course?

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- A. Right. But even in Recondo school, it's not an all-inclusive school. Not all of these replacements are going to Recondo school either. We only get to send so many to that Special Forces school at Nha Trang. The concept of the Recondo school is fine. Here again, you run into the concept as opposed to what they do. We've run the range for them while they were going through training several times. When they first started out, everything they went through was an offensive movement-- setting their ambushes, reaction to surprise fire, and this sort of thing--which seems sort of unusual for a reconnaissance element. They have a dual mission normally, I guess, either reconnaissance patrol or combat patrol. I can tell you from some practical experience that they may go out originally on a reconnaissance patrol but if they meet anybody or anything, they'll blow the whole patrol in order to engage them.
- Q. Is that the concept?
- A. It's not the concept, no. They're supposed to by-pass anything they might run into, but here they don't.
- Q. Any other points you think you can make on mines and boobytraps?
- A. Ninety-nine percent of the troops that we get are coming over here with their minds completely filled with just straight 100% pure bull. And if we have any one mission in life as far as mines and boobytraps go, it's to take the wrinkles out of these people's minds when they get over here.
- Q. Well, what do you mean?
- A. Well, the training centers in the States get these hang-ups. For instance in jungle school the hang-up is escape and evasion and survival. Well, how many people have you got captured in Vietnam right now? Maybe 20 out of 600,000 deployed, or something like this. Survival with this airmobility concept--nobody's 15 minutes away from base camp. Then one after-action report we had out of Vietnam said do not carry a law in the open position in the jungle for a period exceeding four hours. They were very concerned about the dud rate. But they didn't say much at all about living in the jungle around here. They'll take these little mox-nix things and they'll blow them completely out of proportion. At the Fort Riley Senior NCO Orientation Course, the entire hour for first aid was given by a WAC sergeant first class who she spent her time telling us how to prepare an aid pack. I have yet to see an aid pack. With mines and boobytraps, I could take the manual for mines and boobytraps that came out with the counterinsurgency program in 1961 and read you verbatim the course they're giving at the orientation course in Fort Riley, Kansas right now. Any resemblance between that and what's actually going on is purely coincidental. It seems to me that no effort or attempt has been made to up-date these courses to make them effective. You have three

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different types of areas of operation in Vietnam and how you can sit back in the States and give a Vietnam-oriented course on specifics, I don't know. The tactics that you run into and the VC operations are as different as night and day in the three areas. We had no area orientation whatsoever that I know of when we came over and I've contacted nobody yet who has ever had an area orientation as such. Their concept of mines and boobytraps is if you turn your ignition of your jeep on it blows up. It might happen in Saigon, but up here you don't have it. The gas tank boobytraps, fountain pen boobytraps, things like this, you just don't run across them out here in the middle of a base camp complex or something like that. And they're still teaching that stuff. The main thing right now that the VC use is this come-along vine, this trip device, and it's harder than hell to detect these things unless you're really up on it. Unless you really know what you're looking for you'll miss it. So the guy's walking along and he trips this trip wire. It wouldn't take much to put together some training like that, and it would make common sense. The men come in here and say, "Well, hell, I've just finished a total of six weeks training in the States, or in Hawaii or the Canal Zone," and you can't blame them for being disappointed because they're being sent to school again. Our first two days is spent in trying to capture their attention and the last three days are spent in trying to instruct them in some good hard stuff. I've never had a man go out of here without some comment as far as learning something that was new.

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INTERVIEW WITH THE ASSISTANT S3, 1st ENGINEER BATTALION

- Q. I'd like to start by asking you what percentage of the division's total casualties would you say are suffered from mines and boobytraps?
- A. Well, I wrote an article awhile back in reference to this and I can give you percentages as of May, 1967. These are pretty accurate and I don't think the percentages have changed very much. I would say that 33% of the casualties in the division are caused by mines or boobytraps.
- Q. You didn't have numbers on that, did you?
- A. No. It's getting in a little sensitive area here and I would say that the numbers themselves I couldn't give you. I don't have the particular numbers but this is pretty close to right.
- Q. Now, between mines and boobytraps, of this 33%, what percentage of that would be mines and what percentage would be boobytraps?
- A. I think it was 11% boobytraps and 22% mines. What I can do, after we finish here, is get hold of this article and refresh my memory and I can give you the exact percentages.
- Q. Have you got a copy of the article?
- A. Well, no I've only got this rough draft. Both articles went in and one was supposed to be published, but it was not. I'm trying to retrieve it because I want to write it up again when I get time.
- Q. Now, what type of mine or boobytrap is causing you the most trouble? What were you running into the most?
- A. Well, I would say that the one that caused us the most trouble is the nonmetallic mine where the only metallic portion of the mine is the blasting cap itself and the wires leading to the blasting cap. These normally run in two types; they're either the command-detonated mine which is detonated anywhere from 50 meters to 200 or 250 meters off the road, or what we refer to as an offset mine. They're crude firing devices made up of bamboo with strips, pieces of copper between the bamboo strips. When the bamboo strips are pressed together the copper connects and joins the circuit. This fires the mine. It's not uncommon for 70 or 80 vehicles to run over this one spot here and finally the thing will detonate. Normally it takes a heavier type vehicle as opposed to a quarter ton or three-quarter ton.
- Q. How is this mine usually packaged?
- A. It can be wrapped in a poncho or tied with bamboo strips or a piece of canvas, anyway of holding it together and waterproofing it. The size of

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the mine varies according, I imagine, to the amount of explosives available to the VC in a particular area.

Q. There's no average size to them?

A. I don't remember any.

Q. Does it end up being an antitank mine?

A. It ends up being an antitank mine, as opposed to an antipersonnel mine. We have found what we felt were up to 200 pound mines. Now a lot of times, these are very easy to detect when they boobytrap them with, say, artillery shells. This is common, or mortar shells. Any of our ordnance that might have landed and become a dud. Now these butterfly bombs or BLU-3's are common.

Q. That would be about the next most common, would you say?

A. Well, I would say that the next most common is some type of artillery round or Air Force munitions that they have dropped. They pick them up, boobytrap them or rig them in some way that they can detonate. That's the second most common.

Q. What would be the third?

A. The third is just a normal run-of-the-mill hand grenade type where you might dig a hole in the ground, set a rock on top of the hand grenade, pull the pin and when the man kicks the rock the handle flies off and the grenade goes off.

Q. Just different combinations of the hand grenade?

A. Right.

Q. Is this the U.S. or Chicom grenade?

A. Both.

Q. And is there any other that you come across often enough to mention?

A. Well, there are the homemade types. They sometimes manufacture their own in areas around here. Whether they're brought into the area or how they get in, I don't know.

Q. Just miscellaneous, homemade, types?

A. Right.

Q. Are these mainly antipersonnel or antitank?

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- A. Those are homemade and they can be either antipersonnel or antitank. They even make homemade Claymore mines. They're the Chicom type and they vary in size and weight depending on the distance from the road. They won't do too much damage to a tank, but they will disable an APC. They sometimes put them up in trees in a likely spot that a helicopter might come in and fire them at helicopters. Depending on the range, they can stop them.
- Q. Do you get any of these tilt rod detonating devices?
- A. I haven't seen any. I haven't heard of any in here. There are two possibly. In other words, I'm familiar with it, but I can't remember whether it was in this area or some other area.
- Q. Any other types that you think are worthy of mentioning here? Do you run into the DHLO Claymore?
- A. That's the same type I was talking about, the DHLO. It's a DHLO and an MU2, I think, I forget which initial. But I can get that for you, too. The initials vary for the same type mine, depending on whether they were made in China or made here. If it's an original Chicom, it has certain initials and if it's manufactured here in Vietnam, then it's another set of initials.
- Q. What would be the percent ge encountered on a search and destroy, a road clearing operation, or other type of action?
- A. Well, I can't comment too much on search and destroy. Most of the time, we deal mainly with road opening operations. As far as the engineers are concerned it's mainly road opening operations. I can feel fairly safe in saying 99% of the time, it's road opening operations. Every once in awhile we run into a mine or something.
- Q. That's for the engineers. You really don't get that much then on a search and destroy?
- A. We rarely accompany the infantry on a search and destroy. They run into mostly boobytraps, trip flares, wires, and this type thing.
- Q. You're not attached out to the infantry then?
- A. Oh yes we are, but we go out and join the infantry in an NDP, a night defensive position on a particular route that's going to be opened. We go in prior to a convoy being run. We'll go into the area two or three days ahead of time depending on the condition of the route and how much time it's going to take us to upgrade it and give it a couple of careful sweeps before we start sending the convoys over it.
- Q. When the infantry unit moves out on a search and destroy, do you have any engineers go with the company to help them with their demolition or whatever?

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- A. No, we haven't been getting involved in that too much. I understand, though, that the battalion did do this and was helping the infantry in this way when the battalion first got over here. This was in 66. But more recently, our mine detecting has to do mainly with road opening. We're pretty well committed there.
- Q. Where do you encounter these mines and boobytraps? Is it in the jungle, or along the road, or on the road?
- A. Well, we find that most of the mines are on the shoulders of the roads. They have some in the center of the roads, but after talking to some Chieu Hoi's we got certain information that on the well used roads they'll normally plant them in the shoulders so that the narrower civilian traffic can use the center of the road and not be hindered by the mines, whereas the wider military vehicles would hit the mines on the shoulder.
- Q. Then where would the next most common place be, in the ruts?
- A. Well, they could also use this principle of the offset mine. You see, they could put the firing device on the outside of the road and put the mine itself in the center of the road so that when it gets hit, it blows right underneath the vehicle. Speaking of this reminds me that we have had some experience with the Rome plows. In an area where the Rome plows have been operating, we have lost three or four of them because they've put mines on trees. The Rome plow will detonate them and these are put in what they feel will be likely areas that we'd use the Rome plow.
- Q. Now, how about command-detonated mines, is this also pretty common?
- A. Oh, right. This is one of their principle means.
- Q. In other words, this is buried along the shoulder?
- A. Right.
- Q. Command-detonated mines might be the next most common?
- A. Well, command-detonated mines can be placed on the shoulder of the road. Since the wet season is the best time to go in there because you can't detect where they bury them, they might go in and bury numerous mines up and down the route. Then during the dry season they come up and attach one or two and blow them at will because they're hard to detect in the fresh ground. We detect a lot of these mines by visual reconnaissance. In other words, after the mine sweepers have gone up and down a road for a couple days, they become pretty familiar with it and they rely on visual detection as well as the mine detectors, especially a more experienced operator.
- Q. Do you ever operate in the vicinity of the enemy base camps or this sort of thing? Do you run into much there?

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- A. We get into base camps occasionally, but that's mostly the infantry's job. The only thing there is boobytraps.
- Q. Mostly boobytraps?
- A. And command-detonated Claymores.
- Q. Now on your roads, is there any pattern as to where they put these things, like near a village or out in the middle of nowhere?
- A. Well, you can find them any place but you find a higher density of them near populated areas, not in the populated area but in areas that are close to a village. Like Claymore Corner is quite close to a village.
- Q. We were already given an orientation on that being a very bad spot.
- A. Ok, fine. I would say that you're liable to find more there, but you will find them any place.
- Q. Do they normally use an instantaneous or delayed fuze?
- A. Well, it's either, mostly instantaneous if you want to categorize it that way. I would say that I've run into very few delayed fuzes. Now they use the principle of the offset mine to get the effect of a delayed fuze. In other words, the wheel runs over it and the mine detonates underneath the vehicle.
- Q. I would think it would be instantaneous.
- A. It's instantaneous but it employs the principle of delay. In other words, it allows them some portion of the vehicle to pass over the mine before it goes off.
- Q. I think really you might get a delay where this thing doesn't always get the first vehicle because of the strength of the bamboo or wood.
- A. Right, you could say that. It could be a delay type if you want to classify that as a delay type.
- Q. But the fuze itself is not.
- A. The fuze itself is instantaneous. We have run into Bouncing Betty's here and there, on operations in the jungle in the vicinity of the base camps.
- Q. What is the primary initiating action you've run into? Is it pressure, pressure-release or what?
- A. Well, I would say pressure-release, pressure, and command-detonated would be the main ones.
- Q. How would you rank them?

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- A. I would group command-detonated and electrical firing devices together and I would say that would be the most common. Second most common would be pressure-detonated types.
- Q. And pressure-release?
- A. Then pressure-release. Pull would be in there too when you're considering boobytraps with a string on them.
- Q. Do you ever see any friction, chemical or any types like that?
- A. I haven't run into any. I'm not familiar with it if they have.
- Q. Now, what is the primary method that you have of detecting mines and boobytraps? Is it visually or with the mine detector?
- A. The detector and looking are the two main ways. We principally use the detector and it's helped by the visual search.
- Q. If you were to subdivide these things into percentages, do you think that you detect most visually or with mine detectors?
- A. I'm going to side-step that one and say you'd have to ask the people on the ground. Ask these people that are out there finding them. In my area, I would say it's about 50-50. The experienced personnel learn more towards finding them visually. People who are familiar with the road they've been operating on awhile tend to find them visually more than they would with a detector.
- Q. How do you think they do it? Is it by seeing the triggering device, by seeing the mine itself, or what?
- A. By seeing the disturbance in the ground. Also the VC use certain signals to indicate mines. Sometimes these are present and sometimes you can pick them up. These vary from area to area in Vietnam. The ones you find in our sector might be different from the signals up around the DMZ or down in the Mekong.
- Q. Could you describe any of these marking systems?
- A. Well, if you were out in the woods, you might find a marking on the back of a tree, on the opposite side of a tree from where the mine is.
- Q. What would it be?
- A. A cut in the tree. You might be going along a trail and find the brush perpendicular to the trail tied in knots to indicate a mine in the area. When you leave the area, you might find the same thing. In other words, there's a marker at both ends of it. On a road, you might find three rocks in a triangle. The mine will be in the center of it. Or you might

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find an arrow in the road. These are the ones that come to mind. I know there are numerous others. Like I say, they vary. The fact that these signs vary from area to area can't be overemphasized.

Q. This arrow, what is it made of?

A. Wood. Possibly there's a circular reed in the middle of the road. Anything that looks like a sign.

Q. Anything that looks unusual?

A. Right.

Q. You use a FI53 mine detector primarily, don't you?

A. Right.

Q. Do the tactical conditions give you any kind of a clue, for instance, a logical ambush site or the attitude of the people?

A. As far as mining is concerned, there's not too much to indicate it, other than if you get a run of them during an operation. We've had more mining incidents now than we have had recently, but we haven't had as many now as we had a year ago. It depends. Mine incidents, I would say, are closely related to the amount we use the roads. If we use the road constantly, we're constantly outpostting it, constantly securing it, constantly sweeping it, and the mine incidents and the number of mines found decrease. If we haven't used the road for awhile, it stands to reason that if we go in there we will find quite a few the first couple of times. On one operation in late September 1967, we found 142 mines on the road from Ben Cat to Phuoc Vinh; 42 of them were found right in the vicinity of Claymore Corner. That gives you an idea. Now that probably is our heaviest mined area, right in there. Now Route 13 is another principal route that we operate on and we went two months without a mine incident. Just recently we had three. Three vehicles hit mines over the last week and all of them were well off the road, off the beaten track. From the indications of the area, we'd say that these mines had been there a long time. It just happened that vehicles ran off the road at these particular points.

Q. Was it between Lai Khe and Quan Loi?

A. Right, on Route 13 between Lai Khe and Quan Loi.

Q. This is the area you sweep every day?

A. Right. In fact, it was about midway between Lai Khe and Chung Ta.

Q. Is there any other type of detection system that you use, such as dogs?

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- A. We've never used dogs, not in this unit.
- Q. Not for this purpose?
- A. No.
- Q. Do you have any other mechanical equipment of any kind?
- A. Well, we've tried out a few things here and there, experimenting around just to see what we could do. One was pushing a sheepsfoot roller in front of a VTR to see how that worked. I could classify all of them as not significant.
- Q. No significant improvement?
- A. No. The one thing that we have had that was very successful was the rooting down of the road on both sides. We used a single-toothed rooter that digs into the ground a foot to two feet. It cuts the wires of command-detonated mines. We found, when we first used this in a heavily mined area that after we rooted both sides of the road, we went almost two months on this particular road without any incidents of command-detonated mines.
- Q. You just root it once and then visually inspect it after that?
- A. Right, you go down the trough and visually inspect it after that.
- Q. So the sheepsfoot roller and all this stuff didn't really help you at all?
- A. Right, neither the sheepsfoot roller nor the jeep-mounted mine detector.
- Q. Did you use the jeep-mounted detector?
- A. Right, we used it.
- Q. That's the first time I've heard of it over here. Was that your own concoction?
- A. Well, no. We had our own and we experimented with one that DA sent us.
- Q. How did you get it?
- A. I don't know how we got it. We asked for it. We got it quite a few times, two different times that I know of since I've been here.
- Q. Is it still here?
- A. Not that I know of. It's not in our unit. I don't know whether it's in Vietnam or not.

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Q. What was your experience with that?

A. Well, I wasn't out there on the road, but the thing that we found, if I remember correctly was that mechanical things broke on it. The yokes that held it up tended to break and it wasn't as strong as it could have been. I don't remember the other difficulties, but there were one or two others.

Q. Do you think that you could track that thing down for us?

A. Well, the battalion commander probably would be able to tell you where it is. Or I would say call Long Binh to find out.

Q. That's what we're trying to get in. We were under the assumption that there was no jeep-mounted detector in-country and we ordered some. This is why it's so amazing to us how it got in without any of us knowing about it.

A. Where it came from or how it got here I can't tell you, but I know that we've had it twice. In fact, there was a picture of a class being taught by Captain Chamberland, Assistant AE, in the '66 yearbook that we wrote up.

Q. Is there anybody around that might have used that thing?

A. I don't even remember who used it, but I would say that it was probably either our Charlie Company or our Bravo Company.

Q. SECMA is interested in trying anything like that and giving it a thorough testing.

A. Right. Well, we tried this and we didn't think too much of it.

Q. Maybe you didn't have time enough?

A. Well, it's a possibility we weren't using it properly. Maybe we didn't have the right techniques and weren't operating it just like we should have.

Q. I was going to ask you about any techniques used for neutralizing command-detonated mines but I believe the rooter is probably your main method.

A. Right. That's our primary means because it has proven to be our most effective one.

Q. Do you use anything like grappling hooks?

A. Well, we use grappling hooks when dealing with brush roadblocks. We pull those down with it. But as far as mines are concerned, no. Now, we've got a certain procedure that we follow when we find a command-detonated mine. Say we've rooted the road and we're walking along the outside of

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it and find a command-detonated mine there. Since we never walk down the wires or tug on the wires ourselves, we get a PC to try to pull the wires out or we tie a long rope to it and pull it out. We follow the wires, without walking them down, to see where they're coming into the road and we use a mine detector to check the area where the mine might be. If we do not find the mine, we set several charges on the road to see if one of those will blow up the mine. We also use our own electrical firing device to try to fire it. In fact, we use that initially.

Q. Do you cut the wires first?

A. Right. And we make sure we cut them one at a time.

Q. I've heard of people clearing back to 200 meters and finding something like six boobytraps along the length of the wire. Do you do this?

A. Well, this is where we get most of ours. Anybody that gets wounded or killed is searching for these things, and every time there has been a violation of the proven principles that the battalion has set up. Rarely do we have anybody hurt on these mine sweeping operations if they follow the principles that we've found to work.

Q. Do you ever use recon by fire or do you know if any of the units do that?

A. Well, infantry units use it, cav units use it, but we don't. The "tunnel rats" use it a little bit when we're checking out tunnels.

Q. Is there any mine detection done at night?

A. Well there are active preventive means we use to run the road. The infantry runs the road. We set up ground surveillance radar to detect passage over the road or around the road.

Q. You go through the sequence of events after one of your people finds a mine or boobytrap out there, would you?

A. OK. Our principle is this: Try to blow it in place; don't move it at all. Clear people back. One man works with the mine. He places the charge on there, gets back 100 to 200 feet and blows the mine.

Q. So you have a minimum of people up there?

A. Right, only one man is working on it. Once a mine is found, all other personnel are cleared away.

Q. When the infantry find these things, do they call for you to come out and help them?

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- A. This is what we have put out. If the infantry find a mine, they are to call the engineers to come in there and blow the mine.
- Q. Do they do that or do they mostly blow it themselves?
- A. Well, I think you'd have to ask them. I wouldn't be able to recount any of the incidents there. You'd probably do best to ask the people on the ground. I would say that we blow most of them. I know that sometimes they blow them, but I would say the majority of them are blown by the engineers.
- Q. Do you ever by-pass these things due to lack of time or anything like that? Or do you always blow them?
- A. We normally have reaction forces placed at different locations. In case a mine is found, we blow it in place, send out trucks with laterite on them, a grader or whatever we need, fill in the crater, and move on. When we're opening a road, we'll go out there a couple days ahead of the convoy to do our initial sweeping and upgrading of the road. This way we don't have to buck the convoy and repair the road at the same time. We get most of this out of the way. So, we have only isolated incidents within the convoy.
- Q. Now, what kind of reports do you normally make?
- A. We get sit reports back in here from our companies and we report it in our daily SITREP to higher headquarters.
- Q. Do you just call back by radio about these things?
- A. Mostly by radio.
- Q. That's kind of a spot report?
- A. Right. It would come under the heading of a spot report.
- Q. You put a SITREP that night then?
- A. Right.
- Q. Do you have to follow up with any written form as to the circumstances or anything like that?
- A. Only if there is a casualty. Then we follow up with a written form as to how it happened, what the causes were, the circumstances.
- Q. Then I suppose this is usually included in an after-action report?
- A. All the statistics of a particular operation, like the number of mines found there, are included in an after-action report.

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- Q. How's this information disseminated to people? Does it come out in intelligence before an operation or is it put out periodically?
- A. Well, it depends on how far you mean, to what level it is disseminated. What area would you be talking about?
- Q. Well, if a unit was going into an area for an operation, would they get this kind of information before they went in there so they would know generally what to expect?
- A. Say we're going in there to mine sweep on a new operation. We check our records for past mine density reports, we go to a G2 to see what they've got, and normally it comes down in an operations order. Most of this comes in the intelligence annex of the operation.
- Q. How is this distributed normally?
- A. It would be distributed through normal command channels.
- Q. I wonder if you could give me any comments on the adequacy of the replacements that you get in the area of mines and boobytraps? I'm talking mainly about the man that comes over here right out of AIT. How well is he trained?
- A. We always put an inexperienced man with an experienced man. Most of the stuff over here is peculiar to the area. During June and July when we have our biggest influx we set up schools. Last year we had about a six-week school and we ran 50 people through about every three or four days. We also train infantry. We have companies stationed at all the base camps and we train infantry personnel on request by the infantry. We feel that it's necessary to train people once they get over here. They're not ready to go out on their own.
- Q. So you don't really think this man is quite ready. Do you think he has enough background as a good starting point or do you think he could use a little more background before he gets here?
- A. Well, if he's going to be a sweeper, I would say that probably he should be familiar with demolitions. A mine sweeper also has to be an expert in demolitions. You'll find that this is lacking; they don't have enough demolition training. They've probably had it but it doesn't stick, or maybe they haven't had enough practical work. Maybe they've done a lot of classroom work and not a whole lot of practical work.
- Q. Do you ever ask these people if they've had any experience in mine sweeping or anything about the training?
- A. I've never asked them personally, but I would say from their knowledge that they've probably had some. They're familiar with the piece of equipment. I think that sticks.

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Q. Are your NCO's and your junior officers pretty well ready for such things when they get over here?

A. If they're not ready for it, it's just a matter of getting them ready to go out. They should have enough initiative to study it themselves and get with the people that are familiar with it. I don't think that there's any problem in this area, but you can't get enough experience on it. In other words, you can't read up enough on it and I don't think that anything that they prepare you for before you get over here is the same as actually going out on the road.

Q. You have to get the specific local information?

A. Right.

Q. The only thing I'm asking for here is to see if there's something more that could be done?

A. Right. I felt that's what your point was. I'm not trying to put you off. I would say that they should have more experience in this particular mine sweeping job. If they're going to be over here, they're going to be using mine detectors. They should be more experienced with the detector and know how to take care of it. Also, they should know the difficulties inherent in finding mines that are not metallic.

Q. Have you ever used the PRS4?

A. That's a density mine detector?

Q. Right.

A. We've got them, but we rely more heavily on the metallic, the P153.

Q. But have you used them at all? Do you take them out on the roads with you?

A. Very seldom.

Q. What's the problem?

A. I don't know what the problem is there. I just know that we rarely use them. The men prefer the other, the 153. In fact, this man that found 20 mines on one particular operation told somebody interviewing him that this 153 talked to him.

Q. I understand that you ran a little test on mine sweepers' rates and skills. How did that work out?

A. Our B Company ran an experiment about two weeks ago, taking an inexperienced man and an experienced man. An experienced man moving fast can pick up a mine most of the time at six inches, but will probably miss a mine at 12 inches. An inexperienced man moving fast will more than likely miss the mine at six inches. Now moving slowly, the experienced man will always get the mine at six inches and with difficulty, he will get the

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mine at 12 inches. The inexperienced man will generally pick up the mine at six inches. To explain that a little bit more when they are conducting these experiments they are mainly interested in finding the offset device for the electrically fired mine. They normally find that instead of the mine and that's what they're hunting for. That's what was buried at six inches and 12 inches.

Q. Just this little offset device?

A. It's just a piece of bamboo with metallic or copper connections, and some wire. Two batteries, see, can be any place.

Q. What could an inexperienced man moving slowly do?

A. Probably find the mine at six inches but miss it at 12 inches. Like I say, this is experience. This skill is from repetition of using the mine detector.

Q. When they do this sweeping, do they have the earphones right up against their ears or do they keep them out from their ears?

A. I think you'd have to check with the mine personnel out there. I've seen it both ways. I think it depends on the man.

Q. Do you know what the replacements get when they come through this replacement training center?

A. Yes, in Di An I know. We taught the mine detector portion of the class. But we still give them more when they come into the unit.

Q. What does the average man coming through up there get in the way of mines and boobytraps training?

A. Well, I can't answer that right off the top of my head. I'd have to check the lesson plans that we use on that. I can give that to you a little bit later. I'd have to check it out to be sure. I'd like to give you the exact thing.

Q. But in any event, you follow up in the unit regardless of what they get?

A. Regardless. We always put the inexperienced man with the experienced man. And all our mine detector personnel are volunteers.

Q. Are volunteers?

A. Right. The personnel are not assigned to a demo slot. We have the people. They ask for a demo slot. We put a man in there if he wants to be in there.

Q. Is a mine detector operator considered a demo slot?

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- A. We use the demo people as mine detector people.
- Q. Normally, isn't the average Engineer AIT man in the squad supposed to be a mine detector?
- A. Right, but we generally use specific personnel within a squad as mine detector personnel and they draw demo pay. But if they're not in the demo slot and you have quite a few people that won't operate a mine detector, they get paid demo pay only for the amount of time they're actually out in the field. They do not draw demo pay every month, whether they're in the field or not.
- Q. Now the infantry sweepers, of course, don't draw this demo pay?
- A. Well, see, demo pay is for a demolition slot. Now they can put in for demo pay if they are dealing with demo day after day. I don't know the exact regulations, but I know how it governs us. We have certain slots that draw demo pay whether they're in the field or not. Those are demo slots. We have other personnel, who if they are using demo and are in the field, they get paid for the number of days or the percentage of the month that they are actually involved in it.
- Q. Do you have any recommendations for improvements in the training in U.S. or in-country?
- A. Well, I would say that they should have more experience in learning how to detect nonmetallic mines--in other words, learning how to be able to pick up small metallic portions of the mine.
- Q. Minimum metal?
- A. Right. I would say that the man on the ground could probably give you a heck of lot more suggestions than I can.
- Q. Anything in-country that you think ought to be done other than what you're doing?
- A. Well, we've devised what we feel is the optimum organization of the mine sweep.
- Q. We had this described to us up there, the "V" and all that?
- A. Right. It's actually an echelon right or left. We have a forward man on the right or on the left, second man in the center and the third man on the left or right depending on what the first man is. It almost looks like an armored unit or an infantry unit with a company echelon right or echelon left and your weapons platoon to your rear. That's your NCO people and your infantry people back here. The distance between them is normally 25 meters. Normally an infantry point is out front, infantry security is on the left and right flanks, and tanks are in the back with PC's.

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- Q. Anything that I forgot to ask you that you'd like to add?
- A. Well, let me check a couple of these things. I wanted to go over the procedures that we use, the training that we use prior to operations. Also, if we have a road-opening operation, we step up training. In other words, if we're going into a heavily mined area, we normally get our people together and go over a refresher course if they haven't been out. Do anything we can to try to improve the training, the efficiency of the personnel before they go out.
- Q. So if they've been off this thing for awhile, you give them a refresher?
- A. We'll train them again. We'll get out a couple one-hour brush up courses. We'll do anything we can to make sure the people are the best trained before we send them out there.
- Q. Then this is a skill that you've got to continually work at?
- A. Right. This is a skill gained by experience. It's developed. And like I say, the more the men here are familiar with the mine detectors, the better off they're going to be.
- Q. So if there's a gap in the time he uses it, it's easy to lose this skill?
- A. Well, I don't know. You'd have to ask the man. I haven't asked them that particular question.

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INTERVIEW WITH THE S2 AND INTELLIGENCE SERGEANT  
1ST ENGINEER BATTALION <sup>1</sup>

- Q. We've been told quite a bit about the division's methods of combatting the mines and boobytrap problem and it sounds real good. Could you show us some statistics that might give us a better picture of the overall situation?
- A. When Route Zinc, from Lai Khe to Phuoc Vinh, was opened on 5 June '67, 69 mines were found. When it was opened in September, 99 were found. But we can give you a little better overall picture on the mines and boobytraps encountered in a couple of recent periods.

<u>1 August to 15 Oct. '67 (75 Days)</u>	- Total Mines	- 215
Hit on Rt. 13	-	14
Hit on Rt. Zinc	-	4
Boobytraps	-	116
 <u>16 Oct. '67 to Feb. '68 (110 days)</u>	 - Total Mines	 - 214
Hit on Rt. 13	-	16
Hit on Rt. Zinc	-	12
Boobytraps	-	92

From this you can see that the longer you operate on roads, the more you reduce the problem. On those vehicles listed as hitting mines, some are from other units and some are from our road clearing elements. A Cav unit lost several on Route Zinc by getting off the cleared road.

- Q. Do you have any casualty figures that would show the comparative seriousness of mines and boobytraps?
- A. Yes, we have some for the year as of May, '67.

<u>Casualties by Source For the Year as of May, '67</u>	
Mines	22.4%
Boobytraps	10.0%
Small Arms	24.5%
Mortars	22.9%
Miscellaneous	20.2%

Here you can see that mines and boobytraps combined are a higher figure than from any other single cause.

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<sup>1</sup>Not taped, reconstructed from notes and written information.



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- Q. Do you get much information or help on mines and boobytraps from the local people around here?
- A. A. We get some but not much. The best help we have had in locating them has been from some Chieu Hoi's, they really know how to spot them. They tell us, for example, that the VC put the mines off on the shoulders of the road where they will catch the APC's and wide American vehicles but not the local civilian vehicles which stay in the center. We have also tried paying the local people to turn in mines or information on them, but haven't had too much luck on that as yet. I went around with some leaflets explaining this program to the people in some of the villages and I even had some Chieu Hoi's with me. However, this is still a pretty bad area around here and I guess the people are still afraid to tell us much. We always try to question them about where the mines and boobytraps might be, but they usually say they don't know. Actually, they may not know because the mines are usually out from the villages and with the curfew they have, they really aren't supposed to be out where they could see them being planted at night.

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INTERVIEW WITH THE BATTALION COMMANDER  
1ST ENGINEER BATTALION <sup>1</sup>

- Q. We understand that you did some testing of experimental mine and booby-trap equipment in the past; could you tell us about it?
- A. Yes, the division did test a jeep-mounted mine detector, but this was before my time. However, from what I was able to find out, it had a number of mechanical problems and didn't turn out too well. One of the problems, I believe, was the continued breaking of the yokes on the detectors. At any rate, it was not considered a success. Then we tested a barrel type roller which was supposed to be pushed ahead of a tank. This was rushed over here by ERDL and it still had a lot of bugs in it. For one thing, it was hard on the suspension system of the tanks. Then, too, there were problems in turning corners with the roller. I wrote a big report on this and sent it in to SECMA, so it should all be in the files there in case you need more information on it.
- Q. What are some of the main problems you've had in the mines and boobytrap area?
- A. Maintenance of the detectors is always a big problem for us. One of the ways we try to keep the maximum number operational is to pick up any malfunctioning detectors from the units, work on them at night, and then fly them out to the units in the morning so the units can keep working. The worst trouble with the detectors is that the heads keep coming loose. Of course, a lot of your problems can come from not taking care of the detector properly. The men are supposed to have the case out there with them at all times, and when they are not using it they should put it in the case. This protects it from being bounced around and damaged.
- Q. Isn't it pretty hard to keep the mine sweepers on the ball all the time? How do you do this?
- A. I have to personally check them constantly to watch for any apathy or carelessness, or to prevent them from rushing through. At times, we have to watch that they don't get rushed by the tactical units. It's a matter of pride with the engineers that when we sweep a road, it's clear. The brigade commanders are charged with the clearing of roads in their areas and, of course, they want it done right. When we have an especially difficult clearing job coming up, like clearing that route for the 101st, they get some refresher training and I go around to all the sweep teams and impress on them the need to take their time and do a good job. Then after the operation starts I'm usually moving around and dropping in on them to see how they are coming. It takes command supervision all the way down the line.

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<sup>1</sup> Not on tape, reconstructed from notes.

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INTERVIEW WITH THE NCOIC AND FIVE SWEEPERS  
FROM COMPANY A, 1st ENGINEER BATTALION

- Q. First, do the engineers sweep the road every day?
- A. The engineers sweep the road every day it's swept. No infantry sweep it. They haven't found any mines in this area.
- Q. How do you find most of the mines and other things, visually or with the detector?
- A. We haven't found any mines in this particular area in the length of time we've been out here this time. But before, in the rainy season we did. There are two seasons here, the rainy season and the dry season. In the dry season you can pretty near pick them out by sight and the markings, but in the rainy season, it's pretty hard because you get the wash, gravel and so forth, on the roads. Therefore, the same team works that road day after day with a mine detector. There are several incidents where it works out good in soft ground. But this stuff is compact now and you can tell if Charlie's been messing around with the ground any.
- Q. How much of the road are you responsible for?
- A. It's 2.8 miles going the way we went this morning.
- Q. So that took about an hour and 15 minutes this morning for you to do the 2.8 miles, right?
- A. Yes.
- Q. When they start finding mines in the road do you start taking longer to sweep?
- A. Right. I would definitely go slower where our job is to uncover them. But we haven't found anything out here.
- Q. Have any of your units going the other way found anything?
- A. They have found some in the past, right. The reason we sweep a little faster than normal in this area is because we only have two mine detectors and we've got blacktop road. So there's no need to go slow when you've only got an area that big to cover on the sides. It doesn't take you long to cover it.
- Q. You're really just covering the shoulders, right?
- A. Right.

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- Q. How successful do you think this rooter ditch along the side of the road has been?
- A. Oh, you mean for spotting the command-detonated mines. It's real successful, but I've never seen any of those used on this road.
- Q. Is there a ditch that the rooter made along the road?
- A. Yes. I remember back in October when we walked in front of the tanks when they did it.
- Q. But the ditch is still out there now, right?
- A. Yes.
- Q. Do people check it daily or not?
- A. You see, when the infantry use their "V" formation in front of us, they have a man walk in the ditch and he walks the ditch every day.
- Q. What type mines are they finding mostly?
- A. I really couldn't answer you, but I would guess probably Claymore.
- Q. Have you ever used the nonmetallic detector, the PRS?
- A. Right, sir.
- Q. How often?
- A2. We haven't used any on this road. Now on 16 we used it, primarily because of the culverts. It works real good in the culverts and things like this. We found that it's really slow, too slow. It's slower than a PRS-3, a lot slower. When we were on 16, we could cover only a klick in about an hour to an hour and a half.
- Q. The best you could do was an hour and a half per klick with the PRS-4?
- A2. Right, per klick. Well actually it took us about two hours per klick with the PRS4 and between an hour and an hour and a half with the PRS-3 because we wanted to do a thorough job and we wanted to make sure there was nothing there.
- Q. If you had enough time, do you think the PRS4 is a good machine? In other words, if you had four hours to sweep this road, would it be worth your while to use the PRS4 rather than the 3?
- A. Not this road, sir.
- Q. Say it was heavily mined with nonmetallic mines.

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- A. Oh, definitely, definitely.
- Q. You said the PRS-4 was heavy, but other than the fact that it's too heavy, why do you think it's not used? Too slow, or what?
- A. I think it's mostly too slow on pinpointing the objects you are trying to pinpoint. I think it consumes a little bit more time and, again, you don't actually need it. If you find a mine with a P3, you've got to dig for it. With that P4, you can first tell if it's a damn mine by just getting the density of it. With your 4 you can almost tell what's down there, whether it's a mine or just a rock or whatever.
- Q. Do they hold up as well as the P-153?
- A. Well, I've never worked with it that much, sir. A couple days is all I've worked with it. I couldn't really answer that question.
- Q. Have any of you other men ever used the PRS-4?
- A. Not over here, sir. I used it a little in training.
- Q. On that sweep this morning I believe you swept the whole thing without a changeover with anybody? Do you figure you can stay on it about an hour and 15 minutes without becoming tone deaf or anything like that?
- A. Yes.
- Q. What about that Engineer School limit of 20 minutes and all that stuff?
- A. It's a bunch of balony, it definitely is.
- Q. Do you think having the earphones away from your ears helps you to maintain your ability to hear the tone okay?
- A. Well, I sure think so, sir.
- Q. If you had it right on your ears you think it might be different?
- A. I think it would give you tone deafness after so long and you couldn't tell when you picked up that stuff or not.
- Q. But you really don't have any trouble distinguishing sounds with them away from your ears like that for a long period of time?
- A. I have swept up to three hours straight with them on my ears and it never bothered me--you know, I never had a ringing in my ears afterwards.

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- A2. If it's working properly, you can tone it down to practically nothing. This helps. Then when you get a reading, of course, it's going to alert you.
- A. That's right. At night I gotta tone it down to where I can barely hear it. When I pick up something, then I hear it.
- Q. When you're sweeping, are you watching pretty closely to detect visually?
- A. Yes, sir.
- Q. You don't rely entirely on those searchers out ahead of you then?
- A. No, sir. Like this morning, there was a lot of stuff in the road and they just walked past it. I told the lieutenant about it. That slows us down, too. It was a lot of concertina wire and boxes that fell off trucks and stuff.
- Q. You had to get that out of the road so it wouldn't distract you?
- A. Yes, sir.
- Q. How many detectors do you have out here with you now?
- A2. We've got four P-153's.
- Q. How often do you check the phasing block on these things?
- A. We've never checked them. When we check it, we just tone it down and actually just put it down by your boot or anything that's got metal in it and check it.
- A2. Mine detectors you can use so much and they haven't got half the stuff in them. They haven't even got the oscillator or the little quick charge element in there.
- Q. How often do these things go down?
- A. We've had about four of them go down since we've been here and I've been here a period of three months. The trouble is when we send these in to 701st Maintenance, they check them of course, but it just seems that they don't last. As far as I'm concerned, they don't do a proper job. Like, threads on the handle will come loose and they'll send them back to be fixed but pretty soon they break loose again. We have quite a few problems that way.
- Q. What's your biggest complaint with the detector as far as the way it's built or the way it operates?
- A. I haven't got that much of a complaint.

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- Q. Do any of them break real easy?
- A. I think when that happens it's due to over-use, or to putting it together improperly, extending your extension handle and so forth. Something like that just works into the improper usage. As for the mine detector's design, it's designed great.
- Q. Do you take your case out there with you?
- A. No. Not even when we went in on air assault did we take our cases with us. We don't have the time to load them. And when we have to walk through a certain area in the jungle to get to an area, we don't carry them. The man that has it is responsible and he has the know-how with that mine detector. I'd sooner break a cable to keep it in one piece.
- Q. How about a carrying strap or something like that which you could put on your back when you're going through brush like that? Do you think that might help?
- A. Yeah, it might help. Something like this, a board, or something you could snap a piece into place.
- Q. So it would hold it steady on the guy's back and he would have his hands free?
- A. Right. It's a good idea, a real good idea.
- Q. We've had other people recommend that.
- A. It's a real good idea. It leaves your hands free.
- Q. And also it protects this thing from getting hit.
- A. Right.
- Q. Do the same people sweep all the time or do you rotate them around any?
- A. I've got five people out here and I rotate them in areas. Like two people might sweep that way this morning and tomorrow morning they'll sweep this way. It's real good; everybody works equally. If two people run this way all the time, they get tired of it.
- Q. All you men do is sweep out here then?
- A. That's all we do. That's all we've been doing out here.
- Q. Isn't there some value to learning a patch of road so that you can tell when there's a difference from day to day?
- A. Oh, yes, definitely. That's one reason why I don't worry about this road because these people know it. They've been out here five months

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sweeping every day and they can pretty near tell every piece of gravel that's been turned over or anything.

Q. For this period of time then you're just sort of attached to this NDP?

A. Right, we're attached to this NDP, the infantry only. Now they switch off with each other about every two days, but we just stay here. Another man comes in and he might have a little different SOP.

Q. Did any of you participate when they swept up to Phuoc Vinh in October or November going to the 101st base camp?

A. Yeah, these people swept it.

Q. I was wondering, did they use all engineers to sweep it or did they use infantry?

A. As far as I know, in this division engineers have always been used on mine sweeping the road. Always. The only time I've seen infantry actually sweep is when they're going into an area and they want to sweep an area for an NDP, or I've seen the cav sweep off the road. You know, they had their own people sweep off the road to get the tracks off the road. But as far as actually saying this road's got to be swept every day and it's gotta be opened, it's always been left up to the engineers.

Q. Does this infantry unit here have any mine sweeping capability or do they do it at all?

A. Two of these mine detectors are theirs, two of them are ours. So as far as I know they've got a capability. Now whether they've got anybody that knows anything about it, that's something else.

Q. You don't train them or anything like that?

A. I have. I've never trained anybody from this outfit, but I have trained them. I've trained the armor especially. I worked quite a bit with the armor.

Q. Do you know how many detectors you have in the company?

A. I'd say at least nine or ten.

Q. And does everybody get some more from the infantry?

A. Yes, if we need them.

Q. Do you ever have to provide your own security?

A. No.

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- Q. The infantry always provides security?
- A2. Right. Always security on roads. Sometimes the security you get is not too good.
- Q. Did you ever get ambushed or anything like that?
- A. They did the other day up here. That's the only time.
- Q. What happened?
- A. They were just sweeping up there on a tar road and somebody shot at them.
- Q. Was it a sniper?
- A. Yeah. They had him pinned down for about 30 minutes.
- Q. What do they normally give you as far as security?
- A. They have usually three PC's to go down, one in the middle and one on each side of the road.
- Q. Do any of these PC's ever get hit by mines?
- A. There haven't been any hit down here where we are.
- Q. After the engineers sweep this road, have there ever been any incidents of vehicles getting blown up by mines on the road?
- A. Not in our section. Now it has been up further. It has happened on Route 3, wasn't it?
- A2. Yeah. Two of them were Vietnamese civilians.
- A3. No, one was a 2½-ton truck.
- Q. How many were there?
- A2. Three.
- A3. Well, one day there were two of them on it, a 2½ and probably the other one was a Vietnamese bus going up to Da Nang.
- Q. This was after the road had been swept?
- A3. I believe it was.
- Q. Did they have any idea of what type of mines there were in there?
- A3. No, we didn't hear much about it. They said there were mines up there. We don't get all the information.

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- A2. They lost some tanks on Route 301 here. The other day they lost one and they lost one previous to that.
- Q. On the road or off on the shoulder?
- A2. On the road. They've been having mine sweepers go up there but they've been getting shot at all the time. They say, "The hell with it, we'll run it," you know. They run the road and bang, you got it.
- A. This one tank was off the road down here. There's a bridge here that was blown up so the tank was going around it and they got the tank. Another mine was found on the other side of the bridge.
- Q. How much of the road does your engineer battalion have to sweep?
- A. I couldn't say accurately, sir.
- A2. They're responsible for the full length of the road, as far as I know, between Lai Khe and Quan Loi. I don't know how far that is, about 25, 30 miles.
- A3. C Company goes from Lai Khe to Phu Loi, Phu Loi to Di An.
- Q. The ARVN's don't sweep down there?
- A. I've never seen the ARVN's do it.
- Q. Is every inch of the road swept or do they just have to sweep critical spots up north on Route 13?
- A. Well, I couldn't tell you really. I'm not up in that area and I don't know.
- Q. Down here you sweep every inch of it?
- A. Every inch of it.
- Q. And you've always been able to get the thing open on time?
- A. Always got it opened on time.
- A2. The infantry makes sure of that.
- Q. How's that?
- A2. Well, they push you. What are you going to do with a first lieutenant or a captain right there pushing you. You gotta move, right. You gotta go. You can't give them any back talk.
- Q. Well, if you don't feel it's safe, couldn't you tell them you have to take it slower?

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A2. We have but we've just gotten into a big argument. Then it just starts deterring his work or yours. I've never had it happen on this road but I've had it happen a lot of times on 16. That's between Phuoc Vinh and Lai Khe. They'll get started and they just go. Well, here's a section of road and it takes an hour and a half to cover one klick and they want you to cover it in 30 minutes. So you go back and tell the man and he says, "Well, my old man, my captain told me that we had to have this road opened by a certain time. We must have our section cleared." There's only one thing you can do. There's been a lot of talk about this but nobody's ever come up with anything.

Q. Well, how long normally will your people stay at this NDP?

A. We have been here about three months.

Q. Do you ever get back in at all?

A2. Yeah, we go back sometimes, when they call us in.

Q. How often?

A. Well, if they've got an administrative problem or something like this, they call us in to take care of it. They go into Lai Khe maybe once a day, once every two days or something like that. If a man needs something, cigarettes, and he wants to go to the PX, I let him go. Why not?

Q. How do they get in?

A. They ride in on a three-quarter ton, something like this. Just like the time we swept down through 15, checkpoint here by Lai Khe, they'll go in to the PX and catch a convoy coming back out.

Q. In other words, they're not stuck out here for two or three months?

A. No, no. They go in.

Q. How about further north?

A. Yeah. It gets worse as it goes north, but that's just the hazard of the job, you know. It's not that he can't go in, it's just that they haven't got the time or haven't got the transportation.

Q. How often do you sweep side roads out from Route 13 here?

A. Since we've been on this NDP, we haven't ever swept any side roads. These people have on up Route 13. They're trying to find stuff over here you know, stuff over there.

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- Q. Did you ever go with the infantry on search and destroy operations, out in the boondocks to help blow mines or anything like that?
- A. I haven't in the last three or four months. We very seldom accompany the infantry any more on operations. We used to, but not any more.
- Q. Do they use any measures to stop the VC from planting mines?
- A. They sometimes run the tracks up and down the road two or three times a night in these thunder runs, recon by fire. This probably helps to stop the VC and keeps the road clear.
- Q. Have you ever found any mines wrapped in plastic?
- A. They use the plastic around them because these mines are not like ours. They very easily become duds and this is to keep the moisture out.
- Q. During the monsoons, is your equipment affected more than in the dry season in detecting or anything?
- A. Yes, sir. Once the head is wet on your mine detector, sometimes you will get false detection. Actually, you're supposed to keep the head of the mine detector as dry as possible while you're detecting.
- Q. Is it hard to keep it dry?
- A. Yes, sir, it's very hard to do. Especially when you're sweeping the sides of the road and sweeping for vehicles off the road.
- Q. Well, what normally goes when these things get wet?
- A. The units in the head. They have a magnetic field and with the water it neutralizes the field.
- Q. I thought that was sealed, watertight so where the water couldn't get in?
- A. It is, sir, but it'll affect the head, believe it or not.
- Q. Do you try to fix them here by putting new modules in them?
- A2. Definitely, because we haven't got time to be sending them back. The mine detector might get hung up going in air evac and the next morning we haven't got the mine detector. We only have three mine detectors but that's not too bad. It just means more work for one man. I try to fix them here. We try to put our heads together and if we can't fix them here, we send them in.
- Q. When these things normally go, what's wrong with them, just the modules?
- A. No. I don't think we have too much trouble with the modules. It's just the soldering of the wiring with the head going into the casing.

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Q. What, the things just break?

A. Yeah, they break off.

A2. I think a lot of it is these mine detectors have been to maintenance so many times and a lot of these guys back there just don't care so long as they get it working, you know. Back out it goes and they break off real quick.

Q. Do you have any trouble getting any of the replacement parts for these detectors in your supply system, like batteries or modules or anything like that?

A. No, not as far as batteries go. Now a lot of these mine detectors haven't got modules, but ours do. Some of these infantry mine detectors haven't got modules. If we've got any problem, we just switch our modules over and try to get it going.

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INTERVIEW WITH ACTING COMPANY COMMANDER  
A COMPANY, 2/8th INFANTRY BATTALION

- Q. What I'm interested in, of course, is the mine and boobytrap situation. Have you encountered very many mines since you've been in this area?
- A. Not right here. We hit one, let's see, in November on Route 13 and then we found one there the other day, on Route 13. But we haven't had a whole lot of trouble with Route 13. I guess the majority of the action with mines and RPG's is over on 301. Our Bravo was over there the other day. The VC usually try and put them out at night. They leave them in sand bags or something like that, where maybe a driver won't be watching and will hit it. Once they hit it, it's pretty bad.
- Q. As far as the infantry is concerned, what's your biggest problem? Is it mines, or is it boobytraps?
- A. With us, it's boobytraps. On mine sweeping security operations like this, we keep a good watch for them, especially on the sides of the roads. But on the last two search and destroy operations (S & D's), we were in pretty thick jungle and there you come upon stuff like maybe a hand grenade lying on the ground. And the average GI picks it up; he wants to see what it is. We just had an incident where a guy from another company got hurt with something like that. But they'll pick it up and maybe they'll pull the pin and try to throw it. You know that some of these VC grenades are zero fuze and as soon as you pull the pin, it goes. You have to watch that. We found some the other day. We found some butterfly bombs and a hand grenade. People were wise enough to just let them sit there; we blew them in place with some demmo we carried with us.
- Q. Is that what you run into mostly, grenades?
- A. Most of the time, grenades. I especially watch the trees when we move because if the VC find maybe a 105 round that didn't go off, they'll hang it from a tree and run a trip wire across the trail. You trip that and this 105 comes down and blows on you. It'll take out most of your column.
- Q. Is that the main initiating action, the trip wire? Is that what usually sets them off?
- A. In the real thick areas, when the VC aren't there, I'd say that's probably the main thing that I've encountered so far. If you're in an area where the VC are thick and you know they're there, a lot of this stuff is command detonated. The command detonated mine or boobytrap may be the initiating step for an ambush.
- Q. How do your people find these things, mostly just by visual means as they go along?

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A. The boobytraps are found by visual means. What's the only way you can find them.

Q. What do you see first?

A. Usually, if it's hanging from a tree, you'll see the actual boobytrap. It's kinda hard to see a trip wire across the trail, and you really have to watch for it. Of course, if it's rigged up where you're trying to hack your way through, you just hit through it. Sometimes this is where you get caught, where you're just trying to push through on your own power.

Q. I guess it's almost impossible to watch for all of that as you're pushing through the brush. Do you have to hack your way through some of this brush?

A. Some of it. Right around here. Yesterday when we went out through the rubber, that was real easy to move through. But then we got into some thick stuff and then you have to bring your column into a single file. You have one man up there hacking, one man on compass, one with pace, and it takes a long time to move through it. Usually you have flank security out, but you can't put them out too far or you can't see them. You have to keep them close. So you have your flank men with machettes and your point man with a machette. They just chop till you get through it.

Q. Do you ever use dogs?

A. We haven't used dogs in a long time. The last time I had an encounter with a dog was when we were down on operation Union Town South. We actually didn't use a trained dog but we found a dog and he went with us on all the S & D's and was a lot of help.

Q. What was he, just a local mongrel?

A. Just a local mongrel, and he went out with us all the time. There were spots where he couldn't get through so we didn't even try. If he could get through some spots, then we could see where we could get through.

Q. In other words, you followed him?

A. Just about, yeah. It was something. We had our course set and we were going that way. It seemed that the dog just went with us. He stayed with us, ate lunch, found open spots, and we'd hack our way through there. But they do use tracker teams down here and that's mainly to pick up scents in the area. They'll bring a tracker team in by chopper, send them out where there was suspected activity, and they can pick it up pretty well. They work real well.

Q. Are they any help on the mine detecting problem?

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- A. No, not really, because the only thing they can get is an individual's scent. They won't pick up anything like a mine.
- Q. What normally happens when you do find a mine or a boobytrap?
- A. For the mine out on the highway, what you do if you picked it up with the mine sweepers is report it to battalion and let them know. They'll give you the word to check it out for wires leading back, to see if it's command detonated. Of course, once you see the mine, everybody spreads out and gets in a good position, ready to go. If it's not command detonated, you usually send somebody down and they could blow it in place or have it taken out. I'd see exactly what it is. I'd sooner blow them in place because I'd rather not take the chance of having somebody injured taking it out. You find boobytraps in the jungles. You clear everybody out, or let the whole column pass by. And the last man will have some demmo with him, C4, time fuze. You have them blow it in place, and report it up to higher headquarters.
- Q. Do you have people trained on the mine sweepers in the company?
- A. Not school-trained. Usually when we sweep a road where we don't have engineers like we have here, we have certain people designated. They've swept roads before and they know what they're looking for. They have a search team out in front and they know what to look for, too. They look for disturbances in the road, where the road's been dug up. And then your sweepers know what they're looking for on the detectors.
- Q. How do they learn, sort of on-the-job?
- A. On-the-job-training. That's how I learned.
- Q. Do any of your people actually do much of this?
- A. Now, no. The last time that I remember an actual individual in the company was when we left Long Binh. We sealed a village and then swept the road. But now they've equipped us with engineers. It takes a lot of the strain off.
- Q. So you provide security for them and they do all the sweeping at the moment. I guess they use your detectors, though?
- A. Right, sir. We have detectors, parts for detectors, and then whenever we get on a road sweeping operation, we just draw them for that. Then we sweep ourselves unless we're fortunate enough to get the engineers; then they'll use them.
- Q. How do they clear the road? Run the convoys out there on Route 13?
- A2. It looks like they're using two tanks for convoy security out there on that convoy passing by now.

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A. They're running up and down the road all the time. The people sweep it in the morning so that the APC's don't hit anything. Once my people are finished sweeping, we send the PC's down to outpost the road with our people. The tanks usually run in the front and the rear of the convoy. Some of these convoys get pretty long. When the 1st Brigade moved up to Quan Loi we had a convoy every day, a real long convoy. Usually you have a company of tanks, a few PC's and the MP's running the thing.

Q. Do you open this road every day?

A. Just about every day, except when we get the word down to do something else. There was a lot of activity to our west looking for VC rocket sites. They'd give us a call down, and we'd go out on an S & D or a recon in force. Then we'd just close the road. We'd resupply by chopper. It's not bad duty. I like road clearing.

Q. Easier, I guess, than the normal jobs you get?

A. It's a lot easier. The troops have a lot of chance to rest a little bit. The only thing is they get a little stale and you have to really keep priming them for what might happen.

Q. So when you do move out you can get them ready again, right?

A. Right. This is the big problem. They usually know when they're going and they get squared away very well. They know when they're going out on an S & D. They know what they have to take and sometimes it's a good break in this road security for them. It's always good if you can find something.

Q. Do you do a certain amount of S & D out of this NDP anyhow?

A. Right, sir. Maybe every three days, we'll go out on an S & D, recon force, checking for, like I say, rocket sites. Then one of the elements sighted a big base camp over on the east and we go out and check that out. Check for recent activities. They'll pull out of a base camp and you think they're gone; then they'll pull back in and use it again. We found a big rubber plantation house over here that they've been using. We checked it out again, yesterday.

Q. How long have you been over here?

A. About seven months.

Q. Have you lost any APC's to mines during that time?

A. I'm not with the Mech, but I know they've lost some. I've seen them pull them into Lai Khe. They've lost quite a few. They lost some down around Ben Cat. It's just tough going. Especially when you go over land. Like between here and 301, they go over land. They're pretty

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thick in there and they got them with RPG's as well as mines. I think the mine problem isn't as bad now as the RPG's and recoilless rifles. They hit one of those PC's and it's rough.

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INTERVIEW WITH THE DIVISION CHIEF OF STAFF<sup>1</sup>

This was in the nature of an exit interview. The Chief of Staff was briefed on our excellent treatment by division elements, the excellent procedures noted, the purpose of the SECMA Project, and the HumRRO part in the SECMA Project. He was asked if he had any comments on the mine and boobytrap problem.

The Chief of Staff said that he appreciated the all-out effort by SECMA on this very serious problem area, and felt that it would be bound to help. He felt that there had been a great lack of progress in the mine detection field since World War II. He thought that this might have been partially due to a lack of emphasis because the percentage of casualties from this cause was relatively low.

He wondered if all possible efforts had been made to develop possible solutions to the problem by using chemical detectors, aerial photography using infrared or other means, road sprays to detect enemy movement, and putting radioactive material in our ammunition since it is used by the VC so frequently.

He had heard about the RF detonator procedure and thought that this offered considerable promise. He hoped that something could be developed soon in this area, with some flexible approaches that wouldn't limit the size vehicle or equipment used. He thought that there should be an all-out effort for some short range solutions to the problem and a continued emphasis on long range research.

In the meantime, he felt that they must exercise extreme caution to avoid casualties and damage to equipment.

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<sup>1</sup> Not taped, reconstructed from notes.

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